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ABSTRACT

Findings from 10 projects, sponsored by the National Institute of Education, which focused on teaching as a linguistic process, are examined in this paper, along with findings from related studies. The projects constitute first-generation indepth studies of selected classrooms and are discussed in relation to two aspects of the linguistics of classroom environment. The first section explores findings in terms of the differentiated nature of classroom activities, behaviors, and requirements at group and individual levels. The second section combines information about features and outcomes of discourse and relates the data to student academic achievement. The subjects of the projects and their principal investigators are: (1) interpersonal relationships during playground games (Borman); (2) social and cultural organization of bilingual classroom interactions (Cazden and Erickson); (3) effect of classroom organization on learning of classroom discourse rules (Cole); (4) cooperative and didactic interaction patterns (Cooper); (5) learning of discourse rules by culturally different children (DeStefano and Pepinsky); (6) school/home ethnography (Gumperz and Simons); (7) ethnographic and ethnolinguistic patterns of discourse and learning in and out of school (Hymes); (8) children's groups in school (Farnham-Diggory); (9) the contribution of service-like events during individual work time (Merritt); and (10) participant perspectives of classroom discourse (Morine-Dershimer and Tennenberg). (FG)

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Teaching and Learning: A Linguistic Perspective

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Teaching and Learning: A Linguistic Perspective

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In the last decade, several new approaches to the study of teaching-learning processes have emerged. These approaches have their roots in diciplines such as linguistics, information processing, and cognitive psychology. By adapting theoretical constructs and methodological advances from these disciplines, researchers concerned with educational processes have developed new ways to study a variety of educational processes including teacher planning, teacher decision-making, the nature of effective instruction, evaluation of student performance, as well as the relationship among such factors and the relationship between these factors and student learning.

This paper presents a synthesis of and state of the art for one emerging field, the approach that is becoming known as teaching as a linguistic process. The synthesis foucses on a cluster of ten projects sponsored by the National Institute of Education through its grants program (N.I.E., 1978-1979). These ten projects constitute a central core of first generation studies and projects (See Table 1). Additional work related to these projects will be included to extend the state of the art. The work presented in this paper is a representative sampling of research in this emerging field; it is not all-inclusive.

Viewing Teaching - learning Processes as Linguistic Processes: A Brief Overview

In classrooms, as in other communication settings, participants bring a frame of reference to the event; that is, they have a set of expectations for what will occur. However, the specific rules or

Table 1

Demographic Information on Core, NIE Funded Studies

Study Author/Title [1]	Grade	School	Location
Borman, Kathryn: University of Cincinnati Children's INterpersonal Relationships Playground Games and Social Cognitive Skills (NIE G 79-0123)	Second (2) Third (2) Fifth (2) Sixth (2)	Three Schools Inner City Low SES	Cincinnati, Ohio
Cazden, Courtney; Carrasco, Robert; Guzman, Abdil Abel: Harvard University Erickson, Frederick: Institute for Research on Teaching, Michigan State University Social and Cultural Organization of Interaction in Classrooms of Bilingual Children (NIE-G-78 -0099)	First (2)	One School Low SES Bilingual	Chicago, Illinois
Cole, Michael; Griffin, Peg; Newman, Dennis: Laboratory of Comparative Human Cognition, University of California, San Diego The Effect of Different Classroom Organization on the Learning of Classroom Discourse Rules and C Cognitive Content (NIE G-78-0159)	Third (3 yr.1) (1 yr.2 yr.3)	One School Integrated	San Diego, California
Cooper, Catherine; Ayers-lopez, Susan; Marquis, Angela: University of Texas, Austin Children's Discourse in Cooperative and Didactic Interaction: Developmental Patterns of Effective Learning (NIE G-78- 0098)	Kindergarten (1) Second (1)	Two Schools Working & Middle Class; Parochial	Austin, Texas
DeStefano, Johanna; Pepinsky, Harold: The Ohio State University The Learning of Discourse Rules By Culturally Different Children In First Grade Literacy Instruction NIE G-79-0032	First (1)	One School Inner City Appalachian, Black, White	Columbus, Ohio
Gumperz, John; Cook-Gumperz, Jenny; Simons, Herbert: University of California, Berkeley School/Home Ethnography Project NIE-G-78-0062	First Fourth	(1) Two Schools (1) Integrated	Berkeley, California

Study, Author/Title [1]	Grade	School	Location
Hymes, Del; Smith, David et al. University of Pennsylvania Ethnographic Monitoring of Children's Acquisition of Reading/Language Arts Skills in and Out of School NIE G-78-038 Ethnolinguistic Study of Classroom Discourse NIE G-78-0094	fourth (2) fifth (2) Sixth (2)	Three Schools Inner City	Philadelphia, Pennsylvania
Hrybyk, Michael & Farnham-Diggory, Sylvia, University of Delaware Children's Groups in School: A Developmental Case Study NIE G-79-0124	second (1) eighth (1)	Private, Parent Cooperative Parochial	Newark, Delaware Maryland
Merritt, Marilyn; Humphrey, Frank Center for Applied Linsuitics Service-like Events During Individual Work Time and their Contribution to the Nature of Communication in Primary Classrooms NIE G-78-0081	nursery (2) kindergarten (2) first (2) second (2) third (2)	Private	Washington, D.C.
Morine-Dershimer, Greta: Syracuse University; Tennenberg, Morton; California State University, Hayward Participant Perspectives of Classroom Discourse NIE G-78-0161	second (2) third (2) fourth (2)	One School Integrated Black, Spanish-Speaking, White	San Francisco Bay Area, California

1 The principal investigators on the projects are indicated by a solid line under their names.

expectations for performance are signalled by the participants as they work together and build on each others' messages and behaviors to construct the activity and to reach the instructional goal. Since, the teacher is the instructional leader, the teacher's expectations dominate. That is, as the teacher and students work together, the teacher guides the construction of the activity and signals expectations for when to talk, how to talk, and how to interpret the meaning and goals of this talk. In other words, as the teacher presents content, the academic task (c.f., Erickson, 1982), s/he also presents information about how to participate appropriately, the participation task (Erickson, 1982; Wallat & Green, 1982; Green & Harker, 1982).

The academic task and the participation task occur simultaneously and rules for each must be inferred from the verbal and nonverbal behaviors of teachers and from the sequences of interactions between teachers and students (e.g., question-response-evaluation chains; what is positively and negatively sanctioned, and what information gets stressed). In other words, both teaching and learning are inferencing processes. Individual participants and researchers alike must observe not only what language is used but how it is used and how various types of language processes and devices are related and function. To do this, the participants and the researcher must consider the local meanings and expectations (what's happening "now"), the relationship of these meanings to such behaviors and processes in other similar contexts (has this happended before), and whether or not these behaviors match what is expected. In other words, the observe or participant uses prior knowledge of events in this or similar settings to predict what <u>type</u> of behavior or activity

is expected to occur.

When what is expected does not occur, a frame clash is produced (Mehan, Cazden, Coles, Fisher & Maroules, 1976; Green & Wallat, 1979; 1981; Cook-Gumperz, Gumperz & Simons, 1981; Hymes, 1981). By contrasting what occurs in different contexts and/or identifying frame clashes, an observer or participant can uncover what the expected behavior or process is and the rules for academic, social, procedural, and contextual participation. Participation in teaching-learning processes, from this perspective, requires active monitoring and processing of information across many channels of communication and for a variety of co-occurring purposes.

In the sections that follow, findings from ten, multi-faceted projects funded by the National Institute of Education that form the core work considered in this synthesis and state of the art will be presented. Table 2 provides a detailed description of each project and highlights what was explored. To further clarify the general framework for this approach to the study of teaching, two additional pieces of information follow. Figure 1 describes one model used to explore the nature of teaching-learning processes as linguistic processes. This model was selected because it demonstrates how researchers can move from general participant observation (Spradley, 1980), to topic centered observation, to natural experiments. Table 3 provides an overview of the constructs underlying this body of work. (For a more complete explanation of these constructs see Green, 1982).

Together, these projects have produced more than 200 individual findings to date. Still others will be forthcoming as further analyses are undertaken, as the longer-range studies are completed, and as additional secondary analyses are undertaken. The findings,

Table - 2

General Structural Components of the Research Design

Project	General Participant Observation	Topic-Centered Observations	Natural Experiments/ Experimental Tasks
Borman	Playground: layout structure activities	Games students played and organized --formal --informal Patterns of player activity of turn taking Patterns of time spent in activities preceding game, organizing game and playing game Patterns of distractions associated with turns at play Patterns of game maintenance strategies associated with boys' and gi-ls' games	Behavioral Measures: a. Hopschotch/Freeze Tag (Videotape) Hopscotch/Kickball (Videotape) GAME RULES b. Chandler's Bystander Cartoons PERSPECTIVE TAKING c. Selman's "First Things" MORAL JUDGMENTS d. Bruininks-Oseretsky Test of Motor Proficiency (Short Form) MOTOR SKILLS e. Ravens Coloured Progressive Matrices INTELLECTUAL & CONCEPTUAL SKILLS f. Playground Logs g. Teacher Ratings ACADEMIC PERFORMANCE SOCIAL SKILLS h. Peer Nominations POPULARITY / STATUS i. Friendship Ratings
Cazden & Erickson	Classroom: Teacher led large groups Teacher led small groups Informal Peer small groups Peer led instructional groups	Periodic vidotaping and Participant Observation Select observation of activities Observation on nine target students (Selected on basis of language proficiency and academic performance) Range of sociolinguistic variation in terms of social strategies and language/nonverbal communication used Subset of individual children's repertoires used across event contexts "instructional chains" and "naturally occurring peer tutoring" "Cultural" aspects of organization of social strategies and communicative functions in classroom events, i.e., participation structures of the events Patterns of personalization" & "privitization" of instruction in 1. whole group less in math or language arts 2. assignment of seatwork to individual children 3. monitoring by teacher of individual children's seatwork as they do it 4. patterns of praise and/or feedback to children in privitized context, and the differences between private & public personalizing Ethnography of Learning 1. How chidren hold each other accountable for "the social order" and 2. How adults hold children accountable for #1. 3. How teachers learn about what children can do academically & socially	

Table 2 (continued)

General Structural Components of the Research Design

Project	General Participant Observation	Topic-Centered Observation	Natural Experiments/ Experimental Tasks
Cole et al	Classroom: Organization Grouping Teacher-student interactions Curriculum		Curriculum Experiment: Project personal with teacher involvement plan unit of instruction that meets following criteria 1. content fits general curriculum 2. content novel; that is, not within regular curriculum or student activities (e.g., chemical intersection task) Content they planned for delivery under five conditions 1. Tutorial (Adult-Child) 2. Clubs: Computer Capers and Backpack Bears to explore occurrence in non-school settings 3. Lessons a. Teacher led large groups b. Teacher led small groups c. Student only work-time (cooperatively designed by teacher and researcher) Each unit is dsignated as a CYCLE. Each cycle informs the next. Therefore, inquiry evolves.
Cooper et al.		Peer Interactions during individual work time Field notes describe nonverbal behaviors, seating arrangements, & other pertinent contextual information Audio recording of children working on class assignments. Tapes reviewed and indexed for occurrence of instructional episodes. Typology constructed for epsodes. Patterns of student work during individual work time Patterns of teaching and learning bids	Peer communication tasks to explore children's discourse skills under conditions of minimal distraction and to explore skills when role of cooperating partner, teacher, and learner did not have to be negotiated. Task 1: Dyadic Interaction Cooperative Learning Activity Task 2: Dyadic Interaction Asymetrical Knowledge One student had knowledge and taught other Both activities involved blocks and a pan-type balance scale
DeStefano & Pepinsky		Discourse of teacher and 3 target students, during teaching/learning of literacy in the classroom was collected via audio-tape and video-tape 1. Individual's wore wireless microphone to permit collection of subvocalization and interactional discourse 2. Videotapes available to provide check against audiotape records and to examine elements of nonverbal behavior 3. Field notes served as third type of check. 4. Teacher interviews of concepts, classroom values, & expectations tied to literacy	Teacher evaluation of each student's success to construct "Literacy Success Profile" 1. Evaluation information as determined by assignment of subjects to classroom reading groups, interviews with teachers, report cards 2. Score on Clay's Concept of Print Survey, Sand Test MEASURES LIMITED SET OF CONCEPTS ABOUT PRINT AND ENGAGING WITH PRINT 3. Scores on criterion-referenced tests (Houghton-Mifflin) 4. Classroom Reading/ Writing Behaviors 5. Scores on Clays's written language evaluation procedure.

Table 1 Continued

General Structual Components of the Research Design

Projects	General Participant Observation	Topic-Centered Observation	Natural Experiments/ Experimental Tasks
Gumperz & Simons & Cook-Gumperz	Teacher Planning & Pedagogy Participant observer is participant in class and assumes three roles: 1. participant in events & which are then recorded in notes after the event 2. observer of events; participates only if approached for help 3. teacher's aide: Each role provides different view: insiders and outsider's perspectives. Observation of teacher planning 1. explicit information from teacher interviews 2. implicit information from observing teacher behaviors a. plans b. organizational structures c. delivery of instruction Observation of Classroom Processes to ascertain 1. Formal segments of day 2. Ways in which teacher frames activities/events 3. Contrastive situations in which unexpected or atypical events contrast with expected or typical situations Interview participants formally and informally to obtain their perceptions and verification	Select Activities Using contextualization cues and other observed patterns identify signs of discrepancy in events that reflects problem or is an example of differential learning Focus on discrepant events Begin to predict cues of what will and will not occur 1. verbal 2. nonverbal Begin systematic observation and select videotaping Collect data on phenomena in other contexts--e.g., home Naturally occurring activities studied include: 1. Reading group instruction 2. Sharing time 3. Peer network formation	Natural Experiments used to explore target phenomena (e.g., narrative structure, metalinguistic awareness, storytelling) in more constrained way. These activities form a constrative set with the naturally occurring instances of the phenomena Pear Stories (Chafe) To explore oral and written narrative. To explore thematic cohesion devices. Contrast with Sharing Time activity in kindergarten Referential Communication Task (Kraus and Glucksberg) and Phonemic Segmentation Task To explore children's use and its relationship to reading achievement. To explore children's phonological awareness with reading achievemetn To explore children's metalinguistic awareness with reading achievement Storytelling Task To explore the relationship between recognizing and producing well-formed stories and the development of reading skills Science Laboratory Experiment: Lawrence Hall of Science To explore language ise and problemsolving in setting other than school. Videotape visit to Lawrence Hall of Science and work in laboratory. This is a peer langauge situation.
Hrybyk & Farnham-Diggory	Observation of 1. characteristics of the school organization 2. children's social organization 3. neighborhood and family organization Interviews to obtain information on: 1. Children's conception of school organization 2. children's conception of peer organization 3. children's conception of neighborhood organization 4. children's conception of the workplace		Sociometric Questionnaires to assess group structure

Table 2 continued

General Structural Components of the Research Design

Project	General Participant Observation	Topic-Centered Observation	Natural Experiments/ Experimental Tasks
Hymes et al.	This study is composed of eight sub-studies. The studies focus on three different schools. Each study focused on one theme and on the theme in one school	→ 1	
Ave Maria Davis	Focus: School-Community perspective on Back-to-Basics School. Explored perceptions of 1. School policies 2. Homework 3. Literacy materials in home 4. Parent expectations for students and school 5. Community perspective	→ 1	
Eli Anderson	Focus: Life-History of an Administrator Explored contrasting view of school administrator and expectations parents hold for school	→ 1	
Monroe Watkins	Focus: Reciprocal Perspectives of Teachers/Parents. Explored 1. teacher expectations of parents 2. parents' perceptions of school expectations 3. the continuity or discontinuity of these perceptions Also explored teacher and parent perceptions and expectations of 1. homework 2. reading at home 3. parent involvement	→ 1	
Perry Gilmore	Focus: Interdependence of Student expressive behavior with school success in terms of 1. admission to special programs 2. extinguishing undesired behavior within the program Also explored communicative competence 1. in the home 2. in the school 3. in peer situations 4. in teacher-student situations 5. in formal activities 6. in informal activities 7. in the community (e.g., Girl Scouts) In terms of language, she explored the functions of <u>silence</u> in an interactive situation and <u>sulking</u>	→ 1	
J.R. Lussier	Focus: tactics of individual boys in the classroom against the background of school and community environment. Explored participation of individuals boys and peer culture's role in this participation	→ 1	
Linda May	Focus: Monitoring Attention. Explored 1. what counts as attention/inattention 2. verbal styles that can mask attention Also explored teacher-student interactions and responses during informal and formal time in classrooms	→ 1	

1 The information is repeated for topic centered observations

Table 2 continued

General Structural Components of the Research Design

Project	General Participant Observations	Topic-Centered Observations	Natural Experiments/ Experimental Tasks
Hymes et al (continued)			
Claire Woods-Elliott	Focus: A case study on writing instruction in one classroom. This project explores how writing was used and taught as part of learning-centered routines in content areas as well as during formal writing instruction. The study explored 1. rules for writing 2. individual's use of writing 3. official writing 4. unofficial writing 5. collaborative writing 6. teacher orchestration and demands on teachers	→ 1	
Sue Fiering	Focus: Written Literacy in children's Lives. Explored 1. the meaning of literacy 2. difference between directed and spontaneous reading and writing in classrooms 3. nature of official and unofficial reading and writing 4. variation in student participation style	→ 1	Informal Experiments in Curriculum based on systematic observations of the ethnography. Titled: "What ifs" Provides basis for exploring uses of informal activities of student, culture for formal schooling activities
David Smith	Discusses the nature of findings in terms of 1. official and unofficial activities that make up the everyday life in classrooms 2. nature of ethnographic monitoring 3. goals of ethnographic monitoring 4. criteria for ethnographic research 5. limitations of this research		
Merritt & Humphrey	Focus: Review corpus and familiarize researchers with primary project in which the present secondary analysis is embedded 1. review videotape records and field notes using indexing system 2. site visit to original site 3. systematic search of corpus	Focus: search data bank for instances of SERVICE-LIKE EVENTS Explore: 1. over grade levels 2. for ways teachers manage primary and secondary vectors simultaneously 3. for ways students gain help while in the secondary vector 4. for shifts in these events in different contexts 5. for factors contributing to successful negotiation of these events by students	

1 The information is repeated for topic centered observations

Table 2 Continued

General Structural Components of the Research Design

Projects	General Participatant Observation	Topic-Centered Observation	Natural Experiment/ Experimental Tasks
Morine-Dershimer & Tennenberg		Student and Teacher perceptions of classroom language were explored. The project explored 1. Conceptions of pupils of units, salient features, functions, and rules of discourse 2. Match between students' and teacher's conception of discourse features and rules 3. Factors that support or constrain the correspondence between teacher and student conception of discourse features and rules 4. Difference in percpetion of features and rules at home, and in play settings 5. The relationship between teacher evaluation of students and student perception and expectations of students' communicative behavior. 6. Continuities and discontinuities perceived by students between language of home and school 7. Relationship between communication behavior and academic performance in reading Teacher taught six language arts lessons at researcher's request. Teacher selected the content. Criteria: 1. Lesson not focus on spelling/handwriting 2. Lesson include the whole class 3. Lesson include some verbal interaction (i.e., no seatwork)	Stimulated Recall Interviews Using six ½ hour videotapes, each pupil viewed three different lessons. Student responded tp series of tasks: 1. sentence completion task on "rules" of discourse, constructed on the basis of pupil response to an open-ended question about "how people talk in classrooms 2. Generating sentences which might be said by (or to) the pupil to "get someone's attention" or "get someone to do something" 1. Reporting "what you heard anybody saying" after playbacks of short video segments of lessons in which pupils had participated (responses recorded verbatim) 4. Organizing 3 X 5 cards of "what you heard" into groups of cards that "belonged together because people were saying the same kinds of things" 5. Studying a set of teacher questions asked in the lesson (also pupil responses) and explaining who said these things, to whom for what reason Similar procedures used for STIMULATED RECALL INTERVIEWS FOR TEACHEACHERS Similar procedures used for LANGUAGE OF HOME AND OF PLAY SETTINGS Videotapes used for measure of frequency of talk Presentation of students with array of photographs of children in class. Students asked to select three children most likely to fit scenario given. Used to assess STATUS Teacher perceptions of pupils obtained by asking teacher to group children on basis of several different language characteristics, which had been identified in earlier studies as salient features to teachers Pupil entering reading achievement/final reading achievement

Figure #1

Gumperz, Cook-Gumperz & Simons

STAGE I: FRAMING AND PLANNING THE RPOJECT COMPONENTS

MENTAL FRAME-MENTAL GRID
Assumptions Guiding/Driving the Collection, Analysis , and the Interpretation of Data

Assumptions are derived from theoretical and research literature which includes work on:
- discourse processes
- conversational analysis
- ethnography of communication
- classroom organization
- teaching-learning processes
- adult-child interactions
- child language
- cross-cultural communication
- evaluation of performance
- socialization

→

PARTICIPANT OBSERVATION

Single Observer assigned to each classroom. Observer assumes three roles:

1. participant observer: participates in events & observes during participation--records information after event
2. Observer participant: primarily observes--participates only if approached by students for help
3. aide: acts as aid for teacher, helps students

Each role provides a different view of events. This approach allows observer to assume an insider's view at times & an outsider's view at other times. On-going involvement provides time for informal interviewing, capturing developmental aspect of events, & establishing a shared perspective with teacher & students of events

→

Figure #1

STAGE II: DATA COLLECTION - GENERAL PARTICIPANT OBSERVATION

PARTICIPANT OBSERVATION I:
Teacher Planning-Organization

Participant Observer (P.O.) works with teacher before school year begins, before class, at breaks, & after school as aide. P.O. is not trained teacher, is naive, and can ask questions on a "real need to know" basis"; this talk is "talk for doing" job as aide. Approach is used to observe:
1. Teacher plans and planning behaviors
2. Teacher organizational behaviors and practices
3. Teacher theory of pedagogy

EXPLICIT DEFINITION OF BEHAVIORS

Teacher definition of actions available through question and answer sequences between P.O. and teacher in P.O.'s role of aide

IMPLICIT DEFINITION OF BEHAVIORS

Inferred from practice and from directions given to P.O. as aide. Can be made explicity during informal interviewing as part of aide's role

PARTICIPANT OBSERVATION II:
Classroom Processes/Practices

Observer Participant of total day to ascertain:
1. Formal segments of day
2. Ways in which teacher frames activities/events
3. Orchestration of events

Participant Observation of events to help students and to ascertain:
1. segments of events
2. conflict/contrast points
3. expectations for behavior

Basis of segmentation = contextualization cues and participation structures, observable behaviors.

IMPLICIT DEFINITION OF BEHAVIORS

Inferred from sequences of behavior, from actions of teacher and students working with each others' behaviors and observation of contextualization cues.

→

Figure #1

STAGE III: TOPIC-CENTERED PARTICIPANT OBSERVATION

PARTICIPANT OBSERVATION III:
Observe for Contrastive Situations/Signs of Discrepancy

1. Look for instances of differential learning
2. Look for events of day that reflect problem. Best site is event with high incidence of problems (e.g., miscommunication).
3. Look for atypical happenings within typical events
4. Begin to predict type of event that will occur not specific event

PARTICIPANT OBSERVATION IV:
Observe and Videotape Select Events

Observe Participation Structures and obtain Rights & Obligations for events

Observe Verbal Signals and conventions or formulaic/ritualistic uses of language

Observe target individuals selected during earlier stages and who permit observation of contastive behaviors

FIGURE #1

STAGE IV: INFERENCING/HYPOTHESIS GENERATING

INFERENCING/HYPOTHESIS GENERATING

Observe discourse strategies used within the context

Observe indications of evaluation of student performance (verbal- & nonverbal)

Observer students and identify differential performance and treatment within and across settings

Observe recurrent events and begin to predict occurrence of types of events

STAGE V: NATURAL EXPERIMENTS

NATURAL EXPERIMENTS

Plan and execute natural experiments that permit contrast of observed phenomena with similar phenomena in controlled or contrastive settings

I. SCIENCE LABORATORY:
Lawrence Hall of Science

Explore whether the difference in participation setting and structure produce differences in performance

II. PEAR STORIES (Chafe)

Explore narrative production (oral & written) in control situation with naturally occurring narratives in classroom (e.g., sharing time)

III. STORYTELLING TASK

Further explore students' narrative abilities and differences in narrative style among groups of students of different language traditions

IV. REFERENTIAL COMMUNICATION TASK/PHONEMIC PERCEPTION TASK

Explore students' ability to use decontextualized language & contrast to reading-skill performance

V. HOME DATA COLLECTON

Collect data on narrative events in home. Work with parents to select events, have parents tape events (no P.O.), suggest event.

Table 3
Constructs Underlying Core NIE Studies:
Teaching as a Linguistic Process[1]

Constructs	Bormuth	Cazden & Erickson	Cole et al.	Cooper et al.	DeStefano & Pepinsky	Gumperz & Simons	Hrybyk & Farnham-Diggory	Hymes et al.	Merritt et al.	Moreine-Dershimer & Tennenberg	Total
Focus											
Teacher-Student Interactions		X	X		X	X		X	X	X	7
Student/Peer Interactions	X		X	X		X	X	X			6
Contexts are constructed during interactions	X	X	X	X	X	X	X	X	X	X	10
Activities have participation structures		X	X			X		X	X		5
Contextualization Cues signal meaning	X	X		X		X		X	X	X	7
Rules for participation are implicit	X	X	X		X	X		X	X	X	8
Behavior expectations are constructed as part of interactions	X	X	X		X	X	X	X	X		8
Meaning is context specific											
All instances of a behavior are not equal	X	X	X	X	X	X	X	X	X	X	10
Meaning is signalled verbally and nonverbally	X	X	X	X	X	X	X	X	X	X	10
Contexts constrain meaning	X	X	X	X	X	X	X	X	X	X	10
Meaning is determined by and extracted from observed sequences of behavior	X	X	X	X	X	X	X	X	X	X	10
Communicative competence is reflected in appropriate behavior		X	X	X	X	X		X	X	X	8
Inferencing is required for conversational comprehension	X	X	X		X	X	X	X	X	X	9
Frames of reference guide participation of individuals	X	X	X	X	X	X	X	X	X	X	10
Frame clashes result from differences in perception		X	X		X	X	X	X	X		7
Communication is a rule-governed activity		x	x	x	x	x		x	x	x	8
Frames of reference are developed over time	X	X	X		X	X	X	X			8
Form and function in speech used in conversations do not always match		X	X	X	X	X		X	X	X	8
Classrooms are communicative environments											
Differentiation of roles exist between teachers and students; relationships are asymetrical	X	X	X	X	X	X	X	X	X	X	10
Differential perceptions of events exist between teachers and students		X	X	X		X	X	X		X	7
Classrooms are differentiated communication environments		X	X			X		X		X	5
Lessons are differentiated communicative environments		X	X			X		X		X	5
Communicative participation affects student achievement		X	X	X	X	X		X		X	7
Teachers orchestrate different levels of participation											
class		X	X			X		X	X	X	6
group		X	X			X		X	X	X	6
individual		X	X			X		X	X	X	6
Teachers evaluate student ability from observing performance during interactions		X	X		X	X		X			5
Demands for participation co-occur with academic demands		X	X			X					3
Teachers signal their theory of pedagogy from their behaviors		X	X			X		X			4
Teacher's goals can be inferred from behaviors		X	X			X		X			4

(1). The constructs here refelct those that were readily extracted from the studies. These constructs do not reflect the entire theoretical orientation or history of the different authors.

therefore, have been clustered and the data reduced to provide clarification of the features and processes involved in understanding the nature of teaching and learning processes as linguistic processes, as well as the relationship of these processes to student participation, knowledge, and achievement.

The findings will be presented in two clusters. Each cluster has been constructed to reflect a different aspect of the evolving picture of the nature of teaching-learning processes as linguistic processes. Data will be presented about 1) the nature of the classroom as a linguistic environment, 2) linguistic skills required to participate in and meet the demands of the everyday activities, lessons, and events of classroom life for both teachers and students, and 3) the relationship of different patterns of linguistic participation to student participation and developmental changes in language abilities and demands for performance.

A word of caution is needed before proceeding to the discussion. These studies were funded to explore the nature of classrooms as linguistic environments and teaching-learning processes as linguistic processes. With the exception of work researchers such as Bellack et al (1965) and work reported in Cazden, John & Hymes (1972), systematic exploration of these classroom processes has not been undertaken. The core studies funded by N.I.E., therefore, are a series of first generation studies that focus on systematic exploration of classroom life over time. These projects, then, studied a small group of classrooms in depth to both explore the value of and develop procedures for looking linguistically at teaching-learning processes. This intent has been met. The tools for engaging in this type of research have been adapted from other disciplines to meet the needs

of classroom research and educational researchers. In addition, systematic designs and proceudres have been developed that can serve as guides for future researchers and for funding agencies seeking to fund additional work in this area. Table 4 summarizes the types of tasks explored and the orientation of each study. Table 5 identifies the tools used to capture and examine the nature and outcomes of these tasks and processes.

In the sections that follow, the results of this set of projects will be discussed. The limited number of classrooms studied potentiall provides problems in terms of generalizability; however, the range of classrooms was representative of grade levels and different populations (See Table 1). In addition, the classrooms explored represent both the public and private sectors. Therefore, while limited in number, these in depth studies are representative of a wide range of educational settings. The question of generalizability in these studies was one of within classroom generalizability; that is, the researchers were concerned with whether the processes and tasks identified were representative of life in this classroom, with the developmental nature of these phenomena within the classroom, and with the relationship of these phenomena to group and individual student performance, learning and achievement. Therefore, rather than study a large number of classrooms, this work begins to address the concern voiced in Dunkin and Biddle (1974) that we do not know what teaching is for one teacher throughout the day or over time. These studies are concerned with the qualitative as well as the quantitative differences in teaching-learning processes and their relationship to school performance, learning and achievement.

Table 4

General Approach and Analysis Focus

	Bornuin	Cazden& Erickson	Cole et al.	Cooper et al.	DeStefano & Pepinsky	Gumperz & Simons	Hrybyk & Farnham-Diggory	Hymes et al.	Merritt et al.	Morine-Dershimer & Tennenberg	Total
Approach:General			X		X						2
Single Case Study			X								
Double Case Study		X				X					2
Multiple Case Study								X			1
Developmental Approach	X			X			X				3
Cross Age Sampling									X	X	2
Task Focus											
Linguistic focus primary		X			X	X			X	X	5
Language & Reading		X			X	X					3
Language of Home & School		X				X		X		X	4
Language & Instructional Participation		X	X	X	X	X		X	X	X	8
Language & Written Literacy					X	X		X			3
Langage & Math		X									1
Language & Language Arts		X			X					X	3
Cognitive focus primary	X		X				X				3
Social Cognition	X						X				2
Peer Network Development	X					X	X				3
Playground Studied	X						X				2
Language & Cognition Relationship		X	X	X		X					4
Participation Structure & Academic Task Structure		X		X		X					3
Task construction through Language			X								1
Peer Teaching	X	X	X	X		X			X		6
Task Occurrence in and out of school			X			X			X	X	4
Task occurrence in different participation structures			X			X				X	4
Natural Observation-Natural Experiment within Study				X	X		X		X		4
Triangulation										X	1
Qualitative-Quantitative	X				X	X	X			X	5

Table 5

Ethnographic Tools Used for Data Collection

	Bowman	Cazden & Erickson	Cole et al.	Cooper et al	DeStefano & Pepinsky	Gumperz & Simons	Hrybyk & Farnham-Diggory	Hymes et al	Merritt et al	Morine-Dershimer & Tennenberg	Total
Videotape Records		X	X	X	X	X			X	X	7
Audiotape Records	X				X		X		X		4
Field Notes	X	X	X	X	X	X	X	X	X		9
Review Notes of Videotapes		X							X		2
Formal Indexing of Tapes		X	X	X	X	X			X		6
Collaborative Planning with Teacher of Activities to be taped		X						X			2
Participant Observation	X	X	X	X	X	X	X	X	X	X	10
Participation by researcher in classroom as aide			X			X		X			3
Elicitation Tasks	X		X			X				X	4
Interviews of teachers		X	X			X	X	X	X	X	7
Interviews of Students	X		X			X	X	X	X	X	7
Diaries	X										1
Stimulated Recall Interview using ethnographic record teachers		X	X			X	X			X	5
Stimulated Recall Interview using ethnographic record students			X			X				X	3
Tests	X				X	X				X	4
Cognitive Tasks administered	X		X	X		X				X	5

One advantage of this work is that the scope of information collected and the systematicity of the indexing procedures developed make secondary analysis not only possible but potentially valuable as a source of initial information about processes previously unnoticed or undocumented. Table 6 describes these indexing procedures and demonstrates the types of information that can be retrieved. The Merrit (Merritt & Humphrey, 1981) study shows how additional work (secondary analysis) which uses the original work or primary analysis as a framework permits in depth exploration of specific topics (e.g., how to get help from the teacher) not explored in primary study. This topic-centered approach was also used during primary analysis in come of the original or primary projects (e.g., Erickson, Cazden, Carrasco, & Guzman, 1978-1982; Cook-Gumperz, Gumperz & Simons, 1981; and Cole, Griffin, & Newman, 1978-1982). Therefore, while limited in number, these studies can continue to generate topics to be explored in larger, multiple class studies. One such project is currently underway at Harvard. Sarah Michaels and Courtney Cazden have received funding from the Spencer Foundation to extend the work on sharing time and narrative production begun by Michaels as part of the Gumperz, Cook-Gumperz & Simons project.

With these cautions as a frame, the discussion will now turn to an exploration of the findings produced by these in dept studies of classrooms as linguistic environments and teaching-learning processes as linguistic processes. Data will be presented about 1) the nature of the alssroom as a linguistic environment, 2) linguistic skills required to participate in teaching-learning events, and 3) the relationship of different linguistic patterns to student learning.

Table 86

Model Indexing of Data Procedures

TYPE OF SYSTEM	DEVELOPER	PROCEDURES
Computer	Erickson, Guzman, Carrasco	1. Review and catalogue content 2. Write Review Notes: interpretive comments stimulated by viewing Comments are guided by mental grid. Raise question about observed phenomena. Analogous to Field Notes during participant observation Content: descriptive comments methodological comments theoretical comments Provides synoptic view 3. Catalogue includes: (1.) Major events or activities (e.g., morning business, reading period) (2.) Constitutent phases or sub-activities (e.g., for reading: "get reading, "lesson", "wind-up of lesson", "transition to seatwork" (Also called Participation Structure) (3.)Particular sets of interactions of individuals (Teacher-Student, (Student-student) are identified (4.)Overall topic of talk within the interaction (e.g., academic subject-matter- related, or non-academic subject-mater- related) (5.)Time-date generator used to superimpose numbers over copy of original picture (digital clock with time elapsing in hours, minutes, seconds, and tenth of seconds) Provides time reference points for analysis in indes system 4. To retrive data (1.) Scan Field Notes & Review Notes (2.) View Video 5. Transcription of segments. Attempt to display (1.) original text of speech, indicating a. breath-group phrase lengths b. speech rhythms c. pitch chnages d. other aspects of speech prosody (2.) some indcation of sequential flow of action accompanying speech (3.) description reporting location of speakers in space relative to one another (4.) description of most salient nonverba behaviors (gesture, touching, facial expression) which co-occur transcribed speech
	Erickson et al (continued)	(5.) translation of Spanish when Spanish was language (6.) display in three columns: TEXT | Translation | Comments/Sequnence Include: overall sequencing nonverbal behaviors
Filing System	Griffin (Used by Merritt to obtain data for secondary analysis of data collected for another project. See Merritt, 1981, p. 46)	1. Note size of group videotaped (whole class, dyads, triads, etc.) 2. Note participants: only children, children and teachers 3. Record a rough characterization of the topic and nature of verbal and nonverbal behaviors (synoptic view) 4. Record names of participants entering and leaving the video field 5. Cross-reference to other videotapes recorded at the same time or to the audio back-up 6. Record grade, teacher, date of taping, time of day, indexer, equipment used, etc. 7. Recored technical quality of the video and audio recording

The Classroom as a Linguistic Environment

Analysis of the patterns of discourse use by teachers and students revealed the differentiated nature of classroom ac tivities and less ons. Differentiation occurred in terms of requirements for participation as well as in terms of content, in terms of perceptions about language use and participation, and in terms of the types of inter actions teachers had with different groups of participants and individuals within these groups. In addition, various aspects of this differentiated behavior on the part of teachers and students was found to relate to student participation, performance within activities, and student achievement. Findings in these areas will be explored in more depth in this section.

Differentiation by Classrooms. The findings on between class differences are limited. The primary focus of this group of projects was to obtain precision descriptions and understandings of linguistic patterns and demands within and across the differentiated tasks of the classroom. This description and indepth study of a small group of classrooms was a methodological change in direction and was called for by Dunkin & Biddle (1974) who suggested that rather than studying large groups of classrooms, researchers needed to identify what teaching was like for individual teachers and students within and across days. Much of the past work had focused on time sampling and cross-class comparisons. This work, then, provides for indepth descriptions of the nature of teaching-learning processes within individual classrooms.

Within the core group of projects, however, three projects engaged in contrastive analysis: Morine-Dershimer & Tenenberg (1981) explored

the differences in language perception and language use and the relationship of these factors to achievement and participation; Erickson, Cazden, Carrasco, & Guzman (1979-1980) undertook a "double" case study of two bilingual first grade classrooms with bilingual teachers and different classroom organizational patterns (e.g., one more individualized and one more traditional); and Cook-Gumperz, Gumperz & Simons (1981) undertook a double case study with the contrastin the grade levels (first and fourth grade).

Morine-Dershimer and Tenenberg (1981) in their explorations of language use and the relationship of this use to student performance over six language arts lessons, found that three distinctive patterns of questioning behavior could be identified: text-guided questions, pseudo questions, and real questions. The lessons analyzed were taught at the request of the researchers, but the content of the lesson and the form was left to the teacher. The teachers were asked to teach a language arts lesson to the class that included some form of discussion and was not composed of worksheets (individual work). Within these lessons, a series of linguistic analyses were undertaken. The questioning chain analysis produced the three types of questioning styles. Further exploration showed that these questioning styles were related to student attention during the lesson and student final achievement in reading. Each style will be explored briefly.

Teacher A (Chase) used questions students, in recalling what they remembered as hearing, had difficulty recalling. These questions were categorized as "not quotable"; in fact, one student remarked that in order to ask questions the student needed the textbook. Similar findings were also reported by DeStefano & Pepinsky who found that the teacher talk in reading resembled text language rather than natural discourse. (1981b). This pattern was related to low attention and low

achievement.

Teacher B (Eastman) used pseudo questions (c.f., Mehan, 1979). Pseudo questions are found primarily in classrooms or formal learning situations. These questions are questions to which the teacher has the answer and the student does not. The student's task is to give the teacher the answer desired. Pseudo questions,therefore, contrast with real questions in that in real questions, the person asking has or is perceived as having a genuine need for the information, a "need to know". This style was related to low attention and low performance on final reading achievement. Morine-Dershimer & Tenenberg found that students perceived these questions differently than the other two types; they categorized these questions as serving an "instructing" function.

In contrast to these two styles, the pattern of questioning used by Teacher C (Flood) was related to high attention and high final reading achievement. This style was labelled "real" questions. Students perceived these questions as serving an informing function. The teacher wanted to know the information and also used these questions to inform students about what was important.

This project also demonstrated that students could clearly distinguish between the functions of question in school,at home and at play. A caution is needed here, however; the types of lessons sampled were limited and the findings reveal a style of questioning style with a dominant approach. This does not mean that the teachers only asked these types of questions and did not use other forms, but that a definite pattern of use could be identified. This work suggests the need to explore the functions of questions within and across contexts as well as teacher and student perceptions of what questions do. This work suggests that questions serve multiple purposes and that both teachers and students are aware of these different functions.

Erickson et al (1979-1980) focused on a different aspect of the classroom as a linguistic environment. In this project, naturally occurring events in two bilingual classrooms were explored. The two teachers studied had different organizational structures; by peeling back the layers of difference, that is, by moving from macro features (e.g., physical organization) to more and more micro features, the researchers were able to identify pervasive similarities in patterns of linguistic interaction between teachers and students. On a class level, a lesson level, and even an individual within a single lesson level, these researchers found pervasive differences in the approach to teaching. However, when they looked at the ways in which these teachers interacted with individual students over time, they found that the two teachers were similar. They used what is defined by these researchers as a "personalized approach", an approach more like the patterns of interaction in the student's community. They included students in the lessons; that is, they personalized the instruction by includ ing the student's name within the lesson (e.g., spelling sentences used the students' names); they engaged in private conversations and deemphasized competition; they used "culturally" appropriate modes of address even though the participation structures varied.

Early work by Piestrup (1973) suggests that such matches may support differences in achievement. Work by Philips (1972) and Erickson & Mohatt (1978) also suggests that the school-community match can support student participation and learning. These studies, however, are only a beginning. They indicate that surface level differences may not contain the entire answer and that pervasive linguistic patterns that cross lessons need further explor ation if we are to understand the effect on student performance of different types of linguistic environments. Work by Green & Harker (1982) also suggests

that the differences in interactional approach used by teachers place different demands on students for appropriate performance. These authors suggest that the difference may not be so much in terms of academic performance but in terms of the acquisition of strategies for participating in schooling activities; that is, different approaches, as reflected in patterns of interaction, produce different types of student knowledge about "learning how to learn."

The last contrast that will be reported in this section comes from the work of Gumperz et al (1981). This project contrasted a first and a fourth grade class along a variety of features. One feature was the types of knowledge teachers expected of students in terms of performance in instructional activities. Schafer (1980) found that by fourth grade, the teacher they studied expected students to have mastered the general rules for participating in instructional activities.

These studies of classroom similarities and differences suggest that further work is needed on crossing institutional borders. This work indicates that each classroom is a differentiated linguistic environment and that students often perceive the differences between aspects of these environments. More work is needed, however, to understand how the shifting demands of these different environments influence students' knowledge of academic content and what types of knowledge are required for effective and appropriate participation.

Differentiation by Group. In considering the findings on the differentiation of linguistic environments within the classroom, the discussion will move from a macro-level (group) to more and more micro levels, from lesson to individual, to individual over time.

Discussion begins with consideration of group level differentiation. Two projects focussed specifically on differentiation that occurs with task at the group level: Gumperz et al and Cole et al.

Building on the work of McDermott (1978), Collins (Cook-Gumperz, Gumper & Simons, 1981) explored content of group reading instruction as well as the discourse patterns in teacher-student interaction. Collins found that teachers created differentiated environments for high, middle and low group students. He found that in low group lessons for reading, the teacher consistently placed greater emphasis on pronunciation, grammar errors and single word decoding. Less emphasis was given to content and meaning. This behavior pattern contrasts sharply with the behaviors used with the top reading group. The high group was encouraged to "go for the meaning". When member of this group made errors in pronunciation, grammar, or decoding, these errors were often ignored.

Similar findings were also reported by Eder (1982). In addition, Eder found that teachers in her study did not change the composition of their groups during the year. If, as suggested in this work, students extract definitions for activities from participation requirements and form frames of references for activities from chains of behaviors, the effect of this differential treatment becomes clearer. Students in low groups have different input in terms of content, strategies for reading, and definitions of reading. Further work needs to be undertaken to explore the relationship of this input to student reading performance. Micro-analysis allows precision description of the unfolding processes both within and across lessons; therefore, by adopting a topic-centered approach (see Table 2) and by using the micro-analysis procedures developed, future work should provide a systematic picture of the effects of different types of reading practice

on student performance and acquistion of reading skills and processes.

In a related study, Cook-Gumperz & Worsley (1981) explored the ability to tell a well-formed story which has connected sequences with group placement in reading and with language arts skills. They found that in first grade, there is not a direct relationship between good storytellers and reading group placement. Nor did they find a relationship between this ability and school tests of language arts or component reading skills. They suggest that

> as classroom curricula through the grades from first grade on place more reliance on written literacy tasks, the relationship between low reading group, good story tellers and the high reading group, good story tellers will diverge sharply. The former group will lack or be slower with other supporting literacy skills with which to capitalize on their ...flair for narrative expression (1981, p. 15).

This work suggests that the resources students bring to the task of reading are not being utilized. Heap (1980) raises the same question when he explores what counts as reading. He suggests that students' performances may be due to extra-task factors such as prior knowledge (resources), reading the task requirements and not the text (e.g., reading the teacher behaviors), and frame of reference (having a different view of the task). Work on linguistic abilities of students, student-teacher interactions, and evaluation of student performance within and across groups suggests that the question of what counts as reading, as performance, and what contributes to evaluation needs further exploration. This work also shows that reading groups are not equally treated even when time constraints and time on task may be equal.

The work of Cole, Griffin, Newman and others at the Laboratory of Comparative Human Cognition provides further clarification of what the relationship between task structure and student learning is. In a tutorial situation, a teacher was able through the interactional patterns used to influence the resources a student used. The teacher did not utilize the student's knowledge; in fact, the student left the tutorial situation knowing less than when he entered. The student was able to do a portion of the task when he entered but the teacher's actions appeared to interfere with this knowledge and the student's ability to do the task. When the student was asked to work on the task independently in another context, he appeared to know less then he did when he began the tutorial(Griffin,Cole & Newman, 1981)

Similar findings are reported by Harste (Green, 1981). In this instance, a reading teacher signals a rule to the student to help with decoding. The rule signalled is not correct; the teacher corrects her behaviors but does not overtly signal the change. The student continues to use the frame set by the teacher and is unable to decode the word. No other problem occurs of this sort during the lesson. When asked about the word at the end, the student gave a non-sense word that included parts of all words missed. The teacher's instructional strategies affected student performance. In the end, the student was made to look as if he had less skills after the lesson than at the beginning of the lesson.

Cole et al. also report the differentiation a teacher used while using the same instructional plan. The teacher attempted to teach the same instructional plan for long division to her entire class. The class was divided into a series of ability groups and the teacher proceeded to teach long division. Time of instruction

was held constant. As the teacher moved from group to group, her instructional patterns changed with perceived needs of students. This shift in instruction was accompanied by differences in the amount of content covered. The top groups were able to complete the task and engage in extra activities. The slower the group, the less content covered, even though the teacher intended equal content coverage (Midquarter report, 1980; personal communication)

Hrybyk & Farnham-Diggory report a similar finding in terms of learning centers (1981). In observing classroom activities, they report that only those students who complete assignments got to go to learning centers designed to reinforce skills being taught. This practice meant that better or more competent students got reinforcement activities and those who were slower and did not finish were unable to use the centers. They suggest that this practice leads to differential treatment of groups and does not help those who may need the most help.

To summarize, the work on group instructional practices by teachers suggests that classroom instruction differs by group. Griffin suggests that this differential treatment is due not to a single theory of pedagogy a teacher holds but to differential theories of pedagogy based on perceived needs of students (Griffin, personal communication). Work on how teachers perceive different groups of students in terms of abilities and how these perceptions influence the strategies used and the activities selected needs to be undertaken. As indicated above, this type of issue can be explored on a micro-analytic basis as well as on a more global basis (e.g., interviews, planning). This work also suggests that a focus on the pre-planning stage will get at teacher intent; however, if we are to understand the relationship

between planning and instruction, a precise description of the evolving instructional event is needed.

Differentiation within lessons. One of the areas of greatest knowledge gain from these core studies and other related work is the area of language use within lessons. This area has a high degree of convergence across studies; therefore, rather than listing each study under every finding, representative studies will be listed for each finding. To show the scope of convergence with other work beyond the core set of studies, where appropriate, additional work will be cited.

Within lessons, teachers were found to establish routines to guide participation (Erickson, 1982; Cook-Gumperz,Gumperz & Simons, 1981; Merritt & Humphrey, 1981; 1982; Mehan, 1980; Wallat & Green, 1979; Gumperz & Cook-Gumperz, 1976). These routines were found to be stable over time (Guzman, 1981; Michaels & Cook-Gumperz, 1980; Shultz & Florio, 1979; Wallat & Green, 1979; 1982). For example, teachers were found to establish routines for conversational access (Merritt & Humphrey, 1981; 1982; Stoffan, 1981). These routines are used by teachers to signal accessibility or non-accessibility to students. This set of signals is important for managing the flow of activity. If the teacher is working with one group in what is called the primary vector of activity (Merritt & Humphrey, 1981), s/he must also monitor students in other groups and activities (the secondary vector of activity). S/he does this by using verbal and nonverbal signals to indicate when a child can enter, when s/he is leaving the primary vector (called "slotting out") to address someone in the secondary vector. This signalling is important for maintaining engagement of students in the primary vector of activity

as well as for meeting the needs of individual children in other vectors of activity.

Merritt & Humphrey (1981) found that the basis for such differentiation depended on several contextual parameters: 1) the teacher's philosophy about ideal student behavior during individual worktime; 2) the nature of the school setting; 3) the mutual biographical context of teacher and student (e.g. academic standing, extent of child's willingness to work alone, frequency of previous attempts and successes at getting help from the teacher); 4) the nature of the interaction in the primary vector (e.g. is there "down time" -- a break in the activity); 5) the degree to which the solicitor's address overlaps utterances of those in the primary vector; and 6) the degree to which the teacher judges s/he can successfully respond to and dispatch the query without impairing the events in the primary vector (p. 186). In addition, this work showed that once a teacher has actually engaged him/herself in a particular vector of activity, s/he will aim to preserve the integrity of that vector.

However, there are times when demands from outside the primary vector are made. At these times the teacher may 1) include primary vector participants in the change of attention; 2) use split modality (verbal and nonverbal together) involvement to partially "slot-out"; or 3) totally "slot-out" (temporarily leave the vector). They found that the latter strategy may take several forms: 1) act as if s/he had never left--e.g., inserting "hi Carter" [the name of the child seeking entrance or help] in the middle of talking to another child; 2) use a ritual form of slotting-out--e.g.,"excuse me for a moment"; or 3) use a ritual form of "slotting - in" or returning to the primary vector--e.g., "OK, I'm sorry I had to interrupt".

If we shift the focus of the lens for a moment and look at the differentiation process from the child's view, Merritt & Humphrey identify four strategies for seeking individual attention used by students. Students can 1) attempt to overcome the problem or make a decision on one's own; 2) turn to another student for help; 3) switch to an alternative activity; or 4) approach the teacher anyway. Each decision carries different outcomes for the student.

This detailed discussion of signals for accessibility demonstrates the complexity of the decision-making process within each classroom. It also highlights the multiple processing strategies required of both teachers and students. In addition, it identifies the contraints on teachers in giving differentiated help, and on students in obtaining differentiated help. This work also highlights the need for an approach to the study of teaching-learning processes that can capture more than one vector of activity at a time as well as the relationship between vectors and participants.

In addition to routines for accessibility, teachers were found to have routine places for giving important messages (Shultz & Florio, 1979), and for establishing requirements for participation in a lesson (Stoffan, 1981; Wallat & Green, 1979; Green & Harker, 1982). This latter area refers to the establishment of systematic and recurring expectations or norms for behavior teachers hold for student behavior within and across activities. Of special note is the fact that these norms and expectations are not signalled overtly but are signalled by the way the teacher distributes turns, permits talk, acknowledges contibutions, etc. In other words, the teacher signals the rules for conversational participation both verbally and nonverbally (Erickson, 1982) and students must infer what the rules are from the sequences of

behavior.

Teachers were also found to vary the structure of lessons. For example, teachers varied the types of opening moves they used (Morine-Dershimer & Tenenberg, 1981; Guzman, 1980; DeStefano & Pepinsky, 1981; Green, 1977). Opening moves tended to serve dual purposes: to enforce orderliness and to illustrate and make the lesson explicit (Guzman, 1981). Within lessons, teachers were found to vary the use of directives. DeStefano & Pepinsky (1981) found that the use of directives varied by reading group. In the lower group, directives were used to direct activity, while in the middle group, they served to control behavior (p. 21). Teachers were also found to vary the distribution of opportunities to talk (Erickson, 1982; Merritt & Humphrey, 1981) and the types of talk permitted--e.g., chatting (Erickson et al. (1979-1980); informal talk (Hymes et al, 1981).

Another area of variation or differentiation was the use of expressive style. Teachers varied in terms of positive and negative praise used, reprimands given and positive and negative sanctions used (Erickson et al, 1979-1980; Guzman, 1981). Merritt & Humphrey (1981) also found that teachers differentiated or shifted roles and language use with different organizational structures. For example, when the teacher used a structure that required individual student participation, s/he shifted from the director of the activity to the monitor. As the monitor, the teacher used strategies to 1)solicit information, 2) evaluate students, and 3) provide procedural guidance. This work illustrates how the use of individual activities increases the complexity of monitoring and managing required of teachers and students. In this type of organization, the teacher must monitor more than one vector of activity in order to provide help, to know what is occurring, and to be able to maintain the flow of activity in the classroom. The

students also have a complex task; they must also monitor what the teacher and other students are doing as they complete work on their own activities, and they must monitor what the teacher is doing in order to get help. Individual work, therefore, requires multiple processing of cues (Merritt & Humphrey, 1981).

The question of preferential treatment was also explored. Guzman (1980) found that preferential treatment was not a unidimensional phenomenon. Preferential treatment varied by context and activity. Cooper et al (Cooper, Ayers & Marquis, 1982) report related findings in their study of peers as teachers. They found that students used different peer "consultants" in different contexts. In other words, students differentiated requestsfor help and distributed these requests among different consultants. This work suggests that students are aware of the resources different students can provide and therefore, distribute the role of teacher to a peer differentially. Their work also indicates that students use language for teaching and learning differentially; that is, they use different strategies in situations that are cooperative problem solving situations than they do in asymmetrical situations in which one student is in the role of teacher (Cooper, Marquis, & Ayers, 1980; Cooper, Ayers, & Marquis, 1980). Similar findings were reported by Olmeida-Williams for peer teaching situations in bilingual classrooms (Olmeida-Williams, 1981).

In summary, while these findings are only a representative set of findings, they demonstrate the variation and differentiation of language use, language purposes, and language functions that occur within lessons. Recently, this differentiation process was shown to reflect differences in teacher instructional or pedagogical style (Erickson, 1982; Green & Harker, 1982). Style, from this perspective,

is signalled tacitly and can be inferred from or extracted from the ways in which the teacher interacts with students within and across context, from the types of behaviors that are sanctioned, from the types of feedback teachers give about appropriate behavior and from the types of behaviors used by teachers to manage the flow of activity across various vectors of activity. As indicated above, microanalytic approaches permit precise descriptions of processes and relationship in "real time" among processes. This type of approach also permits exploration of variables defined by sequences of behavior--e.g., the type and range of opening moves, the effect of these moves on student participation, and the intent of teachers in using the moves. In addition, these approaches can help identify the conditions for learning for individuals that occur within a lesson; therefore, this type of research can explore the influence of specific types of behaviors and activities on individual student's participation and performance (See Cole et al for further discussion --Cole et al. 1979; Griffin et al., 1981, 1982; Newman et al., 1981).

This work also suggests that the process of decision-making for teachers occurs within lessons and is based on student responses, that decision-making is not a pre-planning stage alone. This work provides a description of the ways in which teachers shift their behaviors based on perceived needs of students, of the activity, or of their own pedagogical intent. It also provides indepth, precise descriptions of how these teacher behaviors support, constrain, or interfere with student performance and knowledge gained from the activity (Newman, Griffin & Cole, 1981)

In the next section, additional discourse features will be considered.

Discourse Processes and the Relationship to Student Knowledge and Participation

The findings on discourse processes that are characteristic of face-to-face interaction in classroom settings will be presented. The relationship of these processes to student academic achievement and to the acquisition of learning strategies, norms and participation in activities will be provided. This section, therefore, combines information about features of discourse and the purpose and outcomes of such discourse; this section then combines the last two aspects of the findings.

Before proceeding to the discussion of the findings, a word of clarification is needed in order to frame the discussion. The studies in the core group focused on identification of discourse processes and face-to-face behavior using current advances in socio-linguistic and psycholinguistic analysis. One of the goals of work in this area was to describe the nature of teaching-learning processes that are part of the on-going demands of classrooms and teaching-learning processes. This goal has been met in part. What emerges from this work is a set of systematic descriptions of lessons and events; in other words, a picture of how participants in teaching-learning processes use language to learn and at the same time acquire new knowledge about language use. Outcomes in this area are of two types, outcomes related to academic performance and outcomes related to participation in processes of interaction.

One caution needs to be considered. The work on instructional processes has been intense and indepth for a limited set of classrooms and instructional activities within these classrooms. However, when taken as a whole, this information provides precise descriptions

of evolving processes and initial explorations of these processes to academic achievement. These results are representative of life in classrooms studied and are suggestive of other classroom settings. The findings come from studies that used contrastive settings, events or students. They represent, with one exception, DeStefano & Pepinsky (1981) a planned contrast within and across classrooms. Even though DeStefano & Pepinsky engaged in exploration of a single classroom, these researchers used planned contrast between three students that reflected systematic differences that were preset. This study,then, provides information about the life in classrooms from the perspective of students with different backgrounds and abilities and explores how these dif erehces not only affected learning and participation for these students but they served as a reference point for exploring the performance of other students and the teacher vis-a-vis these students.

The findings that will be presented in this section, therefore, provide information about both the qualitative and quantitative aspects of life within and across classrooms. One addition caution must be considered. In reporting the findings and providing a picture of the evolving processes, it was necessary to decontextualize these variables; that is, to remove them from context and to isolate them from other processes to which they are linked. This procedure was necessary to highlight what we have learned about the nature of teaching-learning processes as discourse processes. Therefore, it is important to remember that the discrete processes that appear in the discussion and on the charts in this section are not independent of the contexts in which they occurred. To anticipate the question of idiosyncrasy of the findings, criteria were established

when selecting the findings for discussion. Those processes presented in this section represent processes that were found across activities and/or across settings, that extend knowledge of previously identified processes or that related to one of the outcome measures (e.g., achievement, acquisition of discourse processes). The findings in this section, therefore, will focus on an emerging understanding of the nature of teaching-learning processes as linguistic processes.

Discourse Processes: Use, Perception and Relationship to Performance Measures

Representative findings in ten categories will be presented. Each category reflects a different aspect of the conceptualization of teaching-learning processes as linguistic processes. The categories are presented from general discourse processes features to more specific, highly topic-centered features (e.g., praise, sanctions). While the order of presentation is arbitrary, the presentation order was selected so that the reader could begin with broader processes and then,with these as a frame, begin to consider specific or more focussed discourse processes and their influence on participation and achievement. The ten categories of findings are:

1. Representative Nonverbal Discourse Features
2. Representative Samples of Context Constraints on Language Use
3. Representative Findings on Patterns of Language Use
4. Representative Findings on Rules for Speaking
5. Representative Findings on Peer Learning and Language Use
6. Representative Findings on Question Asking and Perception of Questions
7. Representative Findings on the Perception of General Language Use for Teachers and students

8. Representative Findings on the Nature of Attention
9. Representative Findings on Teachers Use of Praise
10. Representative Findings on Teachers Use of Sanctions

The findings are presented in table form, with each table representing a different cluster of findings. The ninety-five findings presented in the tables represent approximately half of all discrete findings. Those selected are not directly redundant with the findings discussed in the previous sections. The findings to be discussed are those that can be readily understood without further elaboration of specialized topics such as narrative structure (Cook-Gumperz, Gumperz, & Simons, 1981), cohesion and linguistic analysis (DeStefano & Pepinsky, 1981), and cognitive psychology (Cole, Griffin, & Newman, 1979; 1981). Each of these fields has a theoretical base with a long history and to do them justice further clarification and identification of underlying constructs would need to be presented in order to provide an adequate frame for the findings. Readers interested in the specific findings in these areas are referred to the original sources. The findings in this section, therefore, are general findings indicative of the nature of teaching-learning processes as linguistic processes.

Representative Nonverbal Discourse Features. Communication in classrooms is a complex process that occurs in different channels. In many instances, verbal and nonverbal messages co-occur. In some instances nonverbal messages help clarify verbal messages and, in other instances, they can be used to carry a second message that is delivered simultaneously with the first message. Table 9 presents a series of findings about how nonverbal behaviors are used, their general characteristics, the purposes they serve, how a student's

Table 9

Representative Nonverbal Discourse Features
Focus: the Process of Identification

General Finding	Specific Characteristics	Observed Purpose	How awareness is signalled	Way learned or obtained	Related to
Messages can be sent across two channels of communication (nonverbal & verbal) simultaneously	"official" teacher involvement is in verbal channel (Merritt & Humphrey, 1981) (p. 136)	Maintaining the flow and instruction	Students who need access from other vectors use nonverbal channel	observe behaviors; behaviors indicate awareness of patterns expected	differentiation of classroom communicative environment
	unofficial (nonverbal modality) channel can be used without officially interrupting (Merritt & Humphrey, 1981) (p. 136)	managing the flow of activity when more than one group is used (e.g., 3 groups)	observe behavior; patterns indicate awareness of expected and appropriate behaviors	tacit rule is learned by observing instances of successful & unsuccessful access gaining	obtaining help appropriate participation slotting-in slotting-out
	teacher collaborates to carry out events in the secondary vector (Merritt & Humphrey 1981) (p. 106)	1) provide aid 2) give directions on next phase of activity 3) prevent crisis/emergency 4) check work 5) display of misinformation 6) brief inquiry 7) student can't continue without help	behavior indicates awareness of appropriate patterns of behavior	observing instance of collaboration by teacher and others	providing help managing flow of activity
	verbal channel sanctioned in favor of nonverbal (kindergarten) (Merritt & Humphrey, 1981; p. 171)	focus attention management	verbally signalled and nonverbally adhered to	overt rule tacit strategy: focus on verbal	locus of attention guiding activity

Table 9 (Continued)

Representative Nonverbal Discourse Features
Focus: The Process of Identification

General Finding	Specific Characteristics	Observed Purpose	How awareness is signalled	Way learned or obtained	Related to
	Nonverbal modality is referred for summoning student	initiation of individual/ private teacher and child interaction	response to summons	observation of conventionalized signal	managing flow of activity individualization private interactions
	Directing students to verbal modality (Nursery level specified)	focus on verbal meaning (more decontextualized language	attention to verbal over nonverbal cues (e.g. student, when information in two channels, uses information in verbal channel over visual (Griffin, personal communication)	developmental ability (Cook-Gumperz, 1981) signalled by verbal actions of others; can be overtly signalled or extracted from behavior patterns observed	learning to depend on verbal cues (adult model) ability to decontextualize meaning (Cook-Gumperz, 1981)

awareness of the nonverbal channel is signalled, ways students learn about the use of these signals and other related areas and concepts.

Table 9 can be read in two ways. Each row provides a different type of knowledge about one specific characteristic or aspect of the process. In a new field, researchers need to specify the various types of evidence used to validate the construct. Each column within a row represents different attributes of the construct. One of the underlying premises of this body of research is that processes of interaction used by participants as they communicate can be captured. Therefore, the columns on Table 9 (also on Table 10) summarize the discourse process from different perspectives: the researcher, the teacher and the student. In addition, information about how these processes are acquired by participants and identified by researchers is provided. The information in each column provides an evolving picture of the different aspects of the process.

As indicated in Table 9, there is an "official" channel of communication which tends to be dominated by the verbal messages. As vividly captured in this table, "unofficial" does not mean "unimportant". The reader will note that what occurs in the unofficial channel are messages related to managing the flow of lessons across different vectors of activity (e.g., monitoring the groups that are working independently while the teacher works with one group) and with providing individual help to students who are not directly working with the teacher. The "unofficial" channel, therefore, becomes a distinct resource for teachers who can consciously gain control over the mechanisms involved in orchestrating two channels of information simultaneously. In Appendix A, a nar-

rative description of how knowledge of "official" and "unofficial" discourse variables became resources for one supervisor of student teachers is presented.

Representative Samples of Context Constraints on Language Use. Table 10 provides a description of a broad range of attributes related to the general finding that classrooms and activities within classrooms are differentiated learning environments. As indicated in this table, researchers using a linguistic or discourse approach have been able to identify multiple levels and types of contexts, rules for participation, descriptions of how contexts and rules within the contexts are constructed and the inter-relationship of the academic task structure and the participation structure. This work, therefore, defines "linguistic environment" as both the academic task and the social participation task structures.

The picture of the classroom as a differentiated linguistic environment that results from the work reported in Table 10 is one of a rule-governed environment. This work suggests that we can no longer assume that language used by teachers and students is the same across all content and contexts. The evolving picture of classroom life is one of shifting demands within and across lessons. The work reported in this table demonstrates the complex features of classroom life and teaching-learning contexts that are orchestrated by teachers as part of their day-to-day activities. In addition, this work suggests that certain aspects of classroom life that are observable are developmental in nature. In addition, the systematic approaches developed within these projects provides a vehicle for both researchers and teachers to observe how these developmental processes evolve over time within and across educational activities

Table 10

Representative Samples of Context Constraints on Language Use
Focus: the Process of Identification

General Finding	Specific Characteristics	Observed Purpose	How awareness is signalled	Way learned or obtained	Related to
Context constrains language use	Participation or event structure is signalled from actions of participants (Erickson, 1982; Erickson & Shultz, 1977; 1981; Philips, 1972; 1974)	managing the organization of an event while simultaneously presenting content	appropriate behavior used during different phases of lesson, activity, event.	inferred from behaviors of others and verbal and nonverbal behaviors of teacher	event organization appropriate participation acquiring strategies for use in activities managing or guiding activities
	Norms for or expectations for behavior are signalled during activity--signals co-occur with content (Erickson, 1982; Cook-Gumperz, Gumperz & Simons, 1981; Griffin, Cole, & Newman, 1982; Merritt & Humphrey, 1981)	managing the organization of events over time establish expectations for participation for activity being constructed develop conventionalized patterns or cues	appropriate behavior is used during different phases of lessons and over lessons of similar type	inferred from behaviors of others, feedback from teacher (verbal and nonverbal)	appropriate participation stability of teaching patterns managing or guiding an activity
Context mediates meaning	Levels of context exist simultaneously (Merritt & Humphrey 1981; Erickson & Shultz, 1981; Bloome & Green, 1982)	1) local context signals what the immediate activity is--what is occurring now	appropriate participation	inferred from behavior patterns	appropriate participation (Erickson, Wallat & Green, 1979;1982

Table 10 (Continued)
Representative Samples of Context Constrains on Language Use
Focus: the Process of Identification

General Findings	Specific Characteristics	Observed Purpose	How awareness is signalled	Way learned or obtained	Related to
	2) event context signals the type of event (e.g., group lesson)	appropriate participation		1) inferred from behavior patterns 2) obtained from verbal information	appropriate participation (continued) Collins, 1980 Eder, 1982; Bloome, 1981; Cole, Griffin, & Newman, 1979; Stoffan, 1981; McDermott 1978
	3) setting context is signalled by the physical context	observed organization description by group member		3) differentiated events, physical areas	
	4) mutual biographical context is history of teacher & child over time	signalled by patterns of behavior used by teacher & child as they collaborate to meet goals		overtime frames for behavior are established from interaction	surface level differences in in struction (Erickson et al. 1979-1980) differentiation shared context construction
rule-governed (all studies)	organizing activities conventions serve to support participation underlying operating principles (Erickson, 1982)	recurring patterns of behavior types of behaviors become more predictable (Cook-Gumperz, Gumperz, & Simons, 1981)		inferred from clash between expected behavior and actual behavior	orderliness of activity stability of expectation (Erickson, 1982; Merritt & Humphrey, 1981; Guzman, 1980; Shultz & Florio, 1979; Wallat & Green, 1979; 1982)

Table 10 (Continued)
Representative Samples of Context Constraints on Language Use
Focus: the Process of Identification

General Findings	Specific Characteristics	Observed Purpose	How awareness is signalled	Way learned of obtained	Related to
	Students transform context to own use or own goals	Meet felt needs or goals of students (Hrybyk & Farnham-Diggory, 1981) Share what is being read (Hymes, 1981; Bloome & Green, 1981)	observed patterns of behaviors		
	Teachers transform evolving task to meet goals and complete task	Teacher appropriates student behavior to complete task (Cole, Griffin & Newman, 1981a; 1981b)-- Use what student brings to task to help him/her complete the task.	observed teacher actions during instruction in response to student actions	inferred from sequnces of behaviors	task performance intentional teaching Cole, Griffin & Newman, 1979; Newman, Griffin, & Cole, 1981 Griffin, Cole, & 1981 Newman, 1982
	Context constrains oral production (Gumperz et al, 1981; Cole, Hall, Downing, 1980; Steinberg & Cazden, 1979; Genishi, 1979; Carey, Harste & Smith, 1981; Green & Wallat, 1979)	signals who talks, how, when and to whom (Hymes, 1972)	patterns of appropriate talk and language use	inferred from actions and verbal behaviors of participants within and across different contexts	Communicative competence (Hymes, 1972)

Table 10 (Continued)

Representative Samples of Context Constraints on Language Use
Focus: the Process of Identification

General Finding	Specific Characteristics	Observed Purpose	How awareness is signalled	Way learned or obtained	Related to
	Academic task structures provide different information than does the participation structure (see below); these structures co-occur (Erickson, 1982; Cole, Griffin & Newman, 1979; Cole et al, 1981a; 1981b)	Provides students with academic content in organized ways 1) present logic of subject matter 2) information content presented in various steps 3) "Meta-content" cues steps to and strategies for completing task 4) Physical materials through which tasks are accomplished	1) sequence of behaviors (verbal & non-verbal) 2) steps in content presentation	inferred from sequnces of information presented	content presentation how tasks are constructed (Cole, Hood, & McDermott, 1978; Cole et al., 1979; Green & Harker, 1982 task analysis (Newman & Gearhart, 1980) Griffin et al, 1981; 1982)
	Social Participation structure involves 1) whole pattern of interactions 2) configuration of roles 3) distribution of rights and obligations (Erickson, 1982; Philips, 1972; 1974)	Guides activity 1) governs sequencing and articulation of interaction 2) defines communication roles	sequences of behaviors used and	inferred from expectations for and behaviors used during interactions--how people hold each other accountable and construct the activity	Participant structure organization structure

Academic Task structure+
Social participation structure = the "Linguistic Environment"

and institutional borders (e.g., grade level; organizational levels; building levels, schooling levels). Such work will extend our knowledge about the inter-relationships between, developmental processes, environmental constraits and instructional processes.

Representative Findings on Patterns of Language Use. This section on findings moves to a more global level in the presentation of findings. In Table 11, specific patterns indicative of teacher-student talk are presented. This table, indicates types of patterns that were explored and general findings related to each pattern. What this table and the tables that follow provide is an emerging language for describing and talking about the strategies, (i.e., linguistic devices) teachers and students use as part of teaching-learning processes. Table 11, therefore, provides a "sampler" of the types of patterns that can be and have been identified.

Representative Findings on Rules for Speaking. In previous sections, classroom discourse has been characterized as rule-governed. Table 12 provides an overview of salient features associated with the development and signalling of rules for speaking and participation. As indicated on this table, the process of learning rules requires conversational inferencing since rules are signalled both tacitly and explicitly. When considered in light of the findings on the differentiated nature of classrooms, the inferencing process required which is cognitive in nature is on-going; that is, while routines are established and activities begin to recur, demands for participation shift frequently both within and across lessons. Therefore, for a student to participate appropriately at any given point in a lesson, s/he must actively interpret the meaning being signalled in the official and unofficial channels of communication.

Table 11

Representative Findings on Patterns of Language Use

General Finding	Source from Core Studies
1. Nominations: Differences in use by context a. overall 1) nominations to respond = 77% 2) nominations in opening bids = 23% b. nominations during reading = 90% (p. 17) c. few opening bids occurred that were to initiate talk in classrooms (teacher) (p. 34)	DeStefano & Pepinsky, 1981
2. Discourse was found to be dominated by teacher initiated exchanges with a relatively high density of speech acts in opening moves (p. 37)	Morine-Dershimer & Tenenberg, 1981
a. opening moves by teachers were dominated by "directive management" and "non-participant informants"	Morine-Dershimer & Tenenberg, 1981
b. dual purposes served 1) enforce order & structure 2) illustrates & makes clear lesson or exercise that follows	Guzman, 1980
3. Teacher talk centered on states or actions with a relatively heavy accompanying references to objects. There was little teacher talk about processes (p. 37)	DeStefano & Pepinsky, 1981
4. Information giving in classrooms was usually in response to a teacher's question and rarely resulted in complete sentences. In play settings, information giving was usually volunteered and mostly given in "complete sentences"(p. 59).	Morine-Dershimer & Tenenberg, 1981
5. Teachers evaluate student language ability using an adult model or and "ideal" model. This evaluation process is often unconsciously done but has an influence on students who have developed a sense of narrative different from the "ideal" that teacher has or the adult model.	Cook-Gumperz & Worsley, 1981 Cook-Gumperz & Green, 1981 Michaels & Cook-Gumperz, 1980
6. Students of different language traditions use language for the same purpose but use different forms and cohesive structures	Hymes, 1981 Michaels & Cook-Gumperz, 1980 Collins & Michaels, 1981 Michaels, 1981

Table 12

Representative Findings on Rules for Speaking

Salient Feature	Source from Core Studies
1. Explicit signals are found in literal meaning	Erickson 1982
2. Implicit features signal	Erickson 1982
a. nonverbal changes in distance	
b. changes in posture	
c. contextualization cues include	Gumperz & Cook-Gumperz, 1976 Gumperz & Tannen, 1980 Erickson 1982 Erickson & Shultz, 1977; 1981
1) syntax	
2) lexicon	
3) stylistic register	
4) prosody (pitch, stress, intonation,etc.)	
5) gaze	
6) body movement	
7) postural position	
8) interpersonal distance	
9) tying between messages	
10) rhythm	
These cues point to meaning, provide redundancy of information and/or additional messages	
3. Tacit: students and observers must actively interpret meaning from interactions	All researchers For example see: DeStefano & Pepinsky, 1981
4. Rights and obligations to speak for any individual related to the question "about what?"	Merritt & Humphrey, 1981
5. Conversational accessibility is regulated	Merritt & Humphrey 1981 Michaels & Cook-Gumperz, 1980
6. Norms or expectations for participation are constructed as part of the ongoing activity	Erickson 1982 Erickson & Shultz, 1977; 1981 Hymes, 1981 DeStefano & Pepinsky, 1981 Borman, 1981 Merritt & Humphrey, 1981

Representative Findings on Peer Learning and Language Use. In this section, the lens of the microscope shifts from a focus on the teacher-child interaction to peer interactions for instructional purposes. The evidence outlined in Table 13 indicates that peer teaching situations are contexts for intellectual development. The findings presented in this table provide a picture of the resources students have available in both informal and formal peer learning/teaching situations. This work indicates that children in primary grades are aware of both the academic and social task requirements of teaching and learning and this awareness becomes an active resource in guiding the student in the role of peer teacher.

Representative Findings on Question Asking and Perception of Questions. One of the major areas of past work on the study of teaching has been the area of questioning. In Table 14, findings on both question asking and perceptions of questions by teachers and students alike are highlighted. This work diverges from most of the early work on questions by considering the functions or purposes served by questions. Therefore, this work provides new information and identifies a viable new direction to the study of questioning and its role in instructional processes. For example, questions were perceived by both teachers and students as serving more than one purpose. The finding that questioning is an area in which the rules for use and/or response are not always clear to students provides further information about the nature of the demands for information processing required of students. It also helps identify another attribute of the linguistic differentiation process in classrooms. Furthermore, this set of findings suggests that exploring the

Table 13

Representative Findings on Peer Learning and Language Use

General Finding	Source from Core Studies
1. Peer culture constrains student participation in classroom interactions by grade four	Gotfried & Schafer in Cook-Gumperz, Gumperz & Simons, 1981
2. Peer learning/teaching is a context for intellectual development	Cooper, Ayers & Marquis, 1981 Morine-Dershimer & Tenenberg, 1981
3. In play groups, the most frequently occurring languge in order were: a. information - giving b. directing/influencing (p. 45)	Morine-Dershimer & Tenenberg, 1981
4. The most reported language in interviews in order were: a. directing/influencing b. information-giving (p. 45)	Morine Dershimer & Tenenberg, 1981
5. In didactic situations, the students used a systematic set of strategic interaction patterns that were associated with effectiveness in peer Learning that was also developmental (kindergarten and second grade a. orient partner b. manage behavior c. instrumental statements d. responses e. evaluation and feedback (p. 2)	Cooper et al, 1981
6. Directives were more effective in cooperative peer learning tasks. No such effect was found for the didactic task (p. 7)	Cooper et al, 1981
7. In cooperative tasks, effectiveness was achieved when a. children pointed b. children showed blocks to partners c. children used directives d. children labelled blocks e. children made evaluative comments (p. 11-13)	Cooper et al, 1981
8. Low frequencies occurred in the use of praising or critical remarks to partners in peer learning situations (p. 8)	Cooper et al, 1981
9. Seven year olds used pacing and managing embedded in teaching and learning sequences to meet their goals (p. 17)	Cooper et al, 1981

Table 13 (Continued)

Representative Samples of Peer Learning and Language Use

General Finding	Source from Core Studies
10. The use of relevant comments and specificity were highly associated with the success of teaching episodes (p. 33)	Cooper et al, 1981
11. Even five year olds seemed able to repair the ambiguity of non-specific bids (p. 33)	Cooper et al.
12. Repeats and reformulations are discourse resources that children use extensively in their replayings (done when no response is given to initiations) (p. 142)	Merritt et al, 1981
13. At first - third grade levels, repeats and reformulations occur more frequently when students are trying to engage other students than when trying to engage the teacher (p. 142)	Merritt et al, 1981
14. Students report watching other students in order to	
a. find out the answer when they don't know the answer	Morine-Dershimer et al, 1981
b. check their answer when they are not sure	Morine-Dershimer et al, 1981
c. in informal situations (e.g., playground) to learn how to play games and what to do	Borman, 1981

Table 14

Representative Findings on Question Asking and Perception of Questions

General Finding	Source from Core Studies
1. Pupils and teachers agreed that teachers asked questions in order to teach or to tell (p. 42)	Morine-Dershimer & Tenenberg, 1981
2. Pupils reported that mothers asked questions because they wanted to know, and that they(students) answered questions in school and home settings because "someone asked" (p. 42)	Morine-Dershimer & Tenenberg, 1981
3. Questions and responses to questions occurred infrequently in play group settings, and when they did occur appeared to serve an attention-getting function rather than an informing function (p. 42)	Morine-Dershimer & Tenenberg, 1981
4. Among both age groups (kindergarten and second grade), successful learners used questions and referred to materials on the problem involved in peer teaching situations (p. 31)	Cooper, Ayers, & Marquis, 1981
5. Classroom questioning is one area (See attention for another) where rules are least clear)	Morine-Dershimer & Tenenberg,1981
6. In teacher initiated exchanges, pupil responses were more salient to both pupils and teachers, even though teacher questions occurred somewhat more frequently (p. 45)	Morine-Dershimer & Tenenberg, 198
6. Pupil responses to questions were reported more often when a. questions occurred in conjunctive cycles ($p < .0017$); conjunctive cycles are two cycles which are tied together because the same question is asked of more than one student--horizontal questions b. question cycles that occurred in embedded cycles ($p < .00013$); embedded cycles are those in which one student is asked a series of questions for clarification or evaluation within a general cycle (p. 41)	Morine-Dershimer & Tenenberg, 198

the nature and purpose of questions from a linguistic base will help clarify one of the most frequently used and salient linguistic devices available to teachers for instructional purposes.

Representative Findings on the Perception of General Language Use for Teachers & Students. The findings on student and teacher perceptions of langauge use suggests that both students and teachers are aware of the differentiated nature of the classroom as a linguistic environment. As Indicated in Table 15, at times, teachers and students view events from similar perspectives and at other times, they view events from different perspectives. In addition, student perceptions of language functions and different types of language use were found to influence student participation. This work reflects an approach that explores the nature of processes from the participants perspective. Additional work needs to be undertaken to explore the ways in which teachers can use strategies for obtaining students' perspectives as instructional resources.

Representative Findings on the Nature of Attention. The findings presented in Table 16 are more complete than those overviewed previously. The reason for the density of findings in this area is that this area, attention, was the focus of a sub-study of one of the projects; that is, it became a topic for specific study for one study. In addition, findings were generated by work on other processes. Central to the topic-centered study on attention was the question of what counts as attention. In systematically exploring this question, May found that attention, like other aspects of face-to-face behavior in instructional activities varies across contexts, by student, by teacher, and by goal or intent of the activity. In addition, May's work also shows that teachers are

Table 15

Representative Findings on the Perception of General Language Use for Teachers & Students

General Finding	Source from Core Studies
1. Teachers tended to report a question in conjunction with a pupil response, or a series of responses, while pupils tended to report pupil responses in isolation from the question that it elicited when asked to report what they remembered hearing or what was said(p. 28)	Morine-Dershimer & Tenenberg, 1981
2. Pupils perceived clear differences for rules of discourse across the settings of home, play and classroom lesson	Morine-Dershimer & Tenenberg, 1981
3. It is clear that pupil perceptions of language shifted as the social context changed from the formal setting of the lesson to the informal settings of families and play groups (p. 31).	Morine-Dershimer & Tenenberg, 1981
4. Frequency of participation in class discussions contributed significantly ($p < .0001$) to the explained variance in final reading achievement(p. 44).	Morine-Dershimer & Tenenberg, 1981
5. Defining question (students) as informative contributed significantly to the explained variance in pupil participation in classroom discourse ($p < .01$).	Morine-Dershimer & Tenenberg, 1981
6. There were strong classroom differences in pupil perceptions of the functions of teacher questions ($p < .001$) and of teacher praise ($p < .05$) in lessons, and these differences correspond to differences in teachers' use of questions and traises, as identified in analysis of classroom language (p. 43).	Morine-Dershimer & Tenenberg, 1981
7. There was a significant relationship between pupil perceptions of the functions of questions in lessons and their "composite concurrent classroom status" ($p < .025$)(p. 43)	Morine-Dershimer & Tenenberg, 1981

Table 16

Representative Findings on the Nature of Attention

General Finding	Source from Core Studies
1. Attention requirements differ within an activity--e.g., a. teaching b. direction-giving c. independent work d. tests e. free time (p. 17)	May, 1981 in Hymes 1981
2. Students' style of verbal interaction can mask their attention to task	May, 1981 in Hymes 1981
3. Teacher basis his/her inference about attention on the basis of observed cues a. orientation of students' bodies 1) eye gaze 2) body movement 3) body orientation b. movement while teacher is talking c. interference with activities of others d. talking e. inability to respond (p. 13)	May, 1981 in Hymes 1981
4. Teachers feel that they have the ability to determine when students are paying attention, but they do not claim to always be correct (p. 13)	May, 1981 in Hymes 1981
5. Teachers rank various evidence of inattention and place greater faith in this evidence than in test results a. ability to follow attention of students--this ability is based on more than behavior of students b. on moment-to-moment indications of attention	May, 1981 in Hymes, 1981
6. Not all learning requires constant attention (p. 14)	May, 1981 in Hymes, 1981
7. Students can give attention without understanding the content or activity	May, 1981 in Hymes, 1981
8. The amount of attention required depends on the degree the teacher feels is necessary; therefore, the rule for attention-giving is not constant	

Table 16 (Continued)

Representative Findings on the Nature of Attention

General Finding	Source from Core Studies
9. Teachers let attention go and pull it in which leads to different tolerance according to a. activity b. individual child c. participation structure d. teacher (p. 28)	May, 1981 in Hymes, 1981
10. Teachers ignore two types of inattention a. whatever can be ignored b. whether or not the teachers want the instance of inattention to be raised to the public level (p. 29)	May, 1981 in Hymes, 1981
11. Types of inattention behaviors likely to be raised to the public level a. loud voice b. lasts a long time (duration) c. draws others in d. one student's voice can be identified e. student moves from one place to the next without positive sanctions	May, 1981 in Hymes, 1981
12. A difference exists between perception of inattention and public notice; therefore consideration of what counts as attention or inattention depends on teacher perception, teacher goal for lesson, group or individual (p. 29)	May, 1981 in Hymes, 1981
13. Teacher and students do not begin with a shared understanding of what constitutes task or rules. The teacher's role is to direct the focus of attention on task and rules and to lay out <u>format expectations</u> a. if the format expectations are not laid out, students may "borrow" formats from another learning environment as a frame for the current activity and therefore perform inappropriately b. problems can also exist when students read only part of the cues (one modality--e.g., verbal and not both verbal and nonverbal)	Merritt, 1982 DeStefano & Pepinsky, 1981

Table 16 (Continued)

Representative Findings on the Nature of Attention

General Finding	Source from Core Studies
14. Fourth graders gave more attention to comments of high achievers, frequent participants, and pupils high in status with the teachers. Third graders showed no significant differences in ratios of attention based on any of these variables (p. 53)	Morine-Dershimer & Tenenberg, 1981
15. Boys were not attended to more than girls (p. 52)	Morine-Dershimer & Tenenberg, 1981
16. High peer status pupils were not attended to more than low peer status pupils (p. 52)	Morine-Dershimer & Tenenberg, 1981
17. Ratios of attention were highest for pupils ho participated frequently in class discussions	Morine-Dershimer & Tenenberg, 1981
18. Ratios of attention were higher for comments of pupils hwo were high in entering reading achievement and lower for pupils low in entering reading achievement (p. 51)	Morine-Dershimer & Tenenberg, 1981
19. There were no ethnic differences in attention to either teacher questions or pupil responses (p. 46)	Morine-Dershimer & Tenenberg, 1981
20. Pupils high in peer status attended more to pupil response than pupils of middle or low peer status (p .05)	Morine-Dershimer & Tenenberg, 1981
21. High achievers in reading attended more to teacher questions than low achievers ($p < .001$) (p. 46)	Morine-Dershimer & Tenenberg, 1981
22. Fourth graders attended less than second and third graders to teacher questions ($p < .05$) and attended more than second and third graders to pupil answers ($p < .02$) (p. 46)	Morine-Dershimer & Tenenberg, 1981
23. Ratios of attention to pupil responses were significantly related to the type of question being responded to (p .001). Pupils reported hearing responses to lower convergent and higher divergent questions most frequently (p. 46)	Morine-Dershimer & Tenenberg, 1981
24. Pairing attention-focusing statements with other moves during peer instruction was highly associated with positive outcomes. Second graders used attention-focusing to precede their questions. (p. 32)	Cooper, Ayerz, & Marquis, 1981

aware of instances of attention and inattention, use a variety of indicators to determine attention and inattention, and make moment-by-moment decisions about how to react to or sanction instances of inattention.

Other work represented in Table 16, indicates that students attended differentially to other students, to teacher talk, and to different types of language processes. Developmental differences were found with regard to what aspects of linguistic performance of teachers and students became the focus of attention. In addition, relationships between student status and achievement and attention to specific linguistic features of teaching-learning discourse were found. No differences, however, were found with regard to teacher questions and student responses for ethnic groups.

Representative Findings on Teachers' Use of Praise. Table 17 overviews the findings on both teacher use of praise and student perception of praise. Praise was shown to be a differentiated linguistic phenomena that served a variety of purposes. Praise was found to function as an attention focuser, as a confirming device, as a framing device, as well as a reward for appropriate performance. Praise was signficantly related to student participation, to student status, and to student achievement. This was expecially true of higher status students or high achieving students (as determined by entering reading achievement). On a whole, students perceived praise as deserved.

Representative Findings on Teacher's Use of Sanctions. Table 18 provides two distinctly different levels of analysis of sanctions and two different approaches. Items 1-3 reflect a linguistic analysis of the use of sanctions in classrooms. This work demonstrates that

Table 17

Representative Findings on Teachers' Use of Praise

General Findings	Source from Core Studies
1. The teach used positive evaluations 2:1 over negative ones. (p. 25)	DeStefano & Pepinsky, 1981
2. Students' replies were evaluated or accepted, but not ignored (p. 25)	DeStefano & Pepinsky, 1981
3. Pupil responses which drew teacher praise were reported as heard more frequently than responses which did not (p. 95)	Morine-Dershimer & Tenenberg, 1981
4. Teachers' strong praise was heard more frequently by students even though its frequency of occurrence was less than other forms of talk (p. 45)	Morine-Dershimer & Tenenberg, 1981
5. Teachers use the same response forms to sanction students during individual worktime as they do in whole group lessons (p. 197)	Merritt & Humphrey, 1981
6. Pupils & Teachers agreed that teacher praise was given because it was deserved (e.g.,"for good ideas") (p. 42)	Morine-Dershimer & Tenenberg, 1981
7. Defining praise as deserved (students) was significantly related to higher participation in class discussion ($p < .025$) (p. 44)	Morine-Dershimer & Tenenberg, 1981
8. Verbal praise occurred very rarely in videotapes of both family conversations and play groups (p. 42)	Morine-Dershimer & Tenenberg, 1981
9. There were significant relationships between pupil perceptions of praise and each of the concurrent classroom status measures separately: a. entering reading achievement ($p < .01$) b. peer status ($p < .05$) c. status with teacher ($p < .005$)	Morine-Dershimer & Tenenberg, 1981
10. Students of the higher classroom status group viewed questions as instructional and praise as deserved P. 43)	Morine-Dershimer & Tenenberg, 1981
11. student of lower classroom status tended <u>not</u> to provide any definition of the functions of these language events (see item 10) (p. 43)	Morine-Dershimer & Tenenberg, 1981

the most frequently occurring type of sanction is not the behavioral sanction for inappropriate behavior or behavior problems, but a linguistic sanction that tacitly indicates to students when and where it is appropriate to talk. The dramatic contrast between placement sanction (250 out of 297 sanctions) and all other sanction provides clarification of how rules for speaking, for participating and for appropriate language use are signalled. In addition, this work provides another area of clarification of information processing demands on students.

The work using the linguistic approach generates new terms for often unnoticed processes and helps explain how teachers manage the flow of interaction while simultaneously presenting and managing the content of lessons. The concept of sanctions provided by the linguistic approach also extends our knowledge of communicative competence required in and across the differentiated activities; this construct and the attributes identified in Table 18 provide a point of departure for further exploration of how teachers orchestrate and manage instructional conversations, construct rules for appropriate performance and teach children about the strategies for appropriate behavior in the differentiated learning environments that make up daily life in classrooms.

Summary

In the sections above, an overview of the nature of teaching-learning processes and the relationship of select processes to student participation and academic performance was presented. The information presented above produced an evolving picture of the classroom as a linguistic environment and teaching-learning processes as linguistic processes. The descriptions and constructs generated from the micro-

Table 18

Representative Findings on Teacher's Use of Sanctions

General Finding	Source from Core Studies
1. Teachers' sanctions in whole group lessons fall into six types a. placement sanctions: placement of utterances by students occurs in wrong place in lessons (e.g., within another student's turn) b. delivery santions: manner (volume or tempo) of utterance is inappropriate c. responsive sanctions: plancement is incorrect but teacher's response indicates awareness of content of student's utterance d. double-takes: Teacher first sanctions utterance because placement is incorrect, then revises action and responds due to emergency signalled in utterance e. curt responses: Teacher responds to content of student's utterance, but curtness indicates s/he is unhappy with its placement f. behavioral sanctions: Teacher is unhappy with the student's behavior and not with any particular utterance (p. 193)	Merritt & Humphrey, 1981
2. Placement sanctions were overwhelmingly more frequent than any other kind: 250 placement 17 behavioral 11 responsive 8 curt 6 double-takes 5 delivery (p. 196)	Merritt & Humphrey, 1981
3. During individual worktime four categories of sanctions can be distinguished: a. Squelch Sanctions: SHHH! b. Attention Deferrals: Just a minute, let her finish her sentence. c. General Behavior Sanctions: You are behind; you have not paid attention. Sit down. d. Rechannellings: If you would get your math checked with Connie, you'd get out faster	

Table 18(Continued)

Representative Findings on Teacher's Use of Sanctions

General Finding	Source from Core Studies
4. Four main ways of sanctioning students were found in second grade: a. Behavior modification point system with prizes for daily & monthly good behavior (as a rule, the students kept close watch on who were "pumpkin persons") b. Loss of center privileges c. Banishment to a desk at the back of the room d. Penalty points in classroom games e. Biased turn-giving along dimensions of perceived intelligence and cooperation, ability to listen and follow directions (p. 40)	Hrybyk & Farnham-Diggory, 1981
5. When school personnel noted a peer group, they set out to control it (e.g., a clique)	Hrybyk & Farnham-Diggory, 1981

analytic studies provide a language that can be used to explore how teacher's fine tune instruction within and across the differentiated environments of classrooms and other educational settings.

This work demonstrated that tasks and activities within and across educational settings do not structure learning; rather, teachers and students acting on these tasks and on each others messages and behaviors construct or create these tasks. Curriculum, then, within this perspective is an evolving process that occurs within general frameworks that may or may not be static (e.g., lesson plans are guides; lessons evolve or are created through interactions). In addition, classrooms were defined as environments in which teachers and students develop shared meanings for activities and that teaching-learning processes are often developmental in nature.

Work in this emerging field has identified demands on both teachers and students for participation and learning. As shown above, teachers must attend to activities in more than one vector of activity; that is, they must manage both the primary activity for the group with which they are working and the flow of other activities for students not directly involved with her/him at the moment. Within an activity, teachers were found to attend to both the academic and social participation structure; that is, as the teacher delivered academic content, s/he also provided information about how to participate, what behavior was appropriate, and when to talk. Teachers also were found to differentiate conditions for learning within and across classroom activities and to use linguistic cues to evaluate student performance in both academic and participation areas.

Student knowledge required for appropriate participation was also identified. Microanalysis of student participation requirements

showed that students must know academic information and how and when to display this information. Being accurate or right was not enough, students needed to present information in appropriate form at the appropriate time. In other words, students had to know both the form and the content required.

In addition, peers were shown to be effective teachers, and peer learning/teaching situations were shown to be a source of intellectual development. Peer interactions occurred in formal and informal situations within and across classrooms; this work also showed that teachers cannot use all informal peer learning activities as "formal" learning activities,since these do not meet student expectations for "school" activities. Furthermore, work in this area found that discontinuities between home and school existed, but that some of these discontinuities were not a problem for teacher or student while others were. If the discontinuity intruded on the "formal" world of the classroom then it became problematic for teachers. If the teacher was unaware of linguistic differences between home and school use of processes such as narrative structure then discontinuity becameaproblem for students,since it often lead to negative evaluation of student ability. This work suggests that teachers will be better able to fine-tune their instructional practices if they have information about the unofficial world of learning for children, the official world of learning and the mesh between these worlds and the world of the school curriculum.

Sources of Future Work. The findings presented in these sections are representative of the types or classes of findings explored to date. However, the multi-faceted nature of the collection procedures and the studies themselves and the systematic indexing of this infor-

mation means that secondary analyses grounded in the primary analysis is viable. The work by Merritt & Humphrey (1981) both demonstrates the feasibility and the value of such analysis. In Table 19, potential areas for further analysis and synthesis within the core studies and one other related NIE grant (Cherry Wilkinson) are described. These areas do not necessarily represent those that form the primary foci of the core studies; rather, these are areas in which systematic data exists and for which additional information can be obtained about the nature of teaching-learning processes as linguistic processes and the relationship of these processes to cognitive and social knowledge required for successful participation in schooling and learning activities.

In addition to directions for research, these projects also provide a rich resource for the development of protocols for training researchers and for helping teachers learn about the strategies and constructs involved in conceptualizing teaching-learning processes as a linguistic process. A set of protocol tapes have recently been developed to help teachers and trainers learn about the nature of classrooms as a linguistic environment and teaching-learning processes as linguistic processes. Table 20 provides an overview of these tapes and the accompanying books (Cahir & Kovacs, 1981). As indicated in this table, the protocol materials include a training manual, a student participant's book and videotapes with illustrative classroom events. Other such materials can be developed from these projects to illustrate the different constructs and to help people learn to look at and explore classrooms from a linguistic perspective.

The second type of protocol that might be developed is one that provides researchers with a picture of the data bank, with

Table 19

Potential Areas for Further Analysis and Synthesis
Within Studies on Teaching as a Linguistic Process

Area	Source
Language Arts: READING	Cazden & Erickson NIE G-78-0099
	Gumperz, Cook-Gumperz & Simons NIE G-78-0082
	DeStefano & Pepinsky NIE G-79-0032
	Cherry Wilkinson University of Wisconsin, Research and Development Center on Individualized Schooling, NIE Grant
Language Arts: WRITING	Hymes NIE G-78-0094
	Gumperz, Cook-Gumperz, & Simons NIE G-78-0082
Language Arts: SPEAKING	Cazden & Erickson NIE G-78-0099
	Cole, Griffin & Newman NIE G-78-0159
	Gumperz, Cook-Gumperz, & Simons NIE G-78-0082
	Hymes NIE G-78-0094
	Morine-Dershimer & Tenenberg NIE G-78-0161
MATH Instruction	Cole, Griffin, & Newman NIE G-78-0159
	Cazden & Erickson NIE G-78-0099
SOCIAL STUDIES/SCIENCE Instruction	Cole, Griffin & Newman NIE G-78-0159
	Gumperz, Cook-Gumperz & Simons NIE G-78-0082
Effective ORGANIZATIONAL STRUCTURES	Cazden & Erickson NIE G-78-0099
	Cooper, Ayers-lopez, & Marquis NIE G-78-0098
	Cole, Griffin & Newman NIE G-78-0159

Table 19(Continued)

Potential Areas for Further Analysis and Synthesis Within Studies on Teaching as a Linguistic Process

Area	Source
Effective ORGANIZATIONAL STRUCTURES (Continued)	Gumperz, Cook-Gumperz, & Simons NIE G-78-0082
	Hrybyk & Farnham-Diggory NIE G-79-0124
	Hymes NIE G-78-0038
	Merritt & Humphrey NIE G-78-0081
	Morine-Dershimer & Tenenberg NIE G-78-0161
MANAGEMENT	All studies have some material that is relevant
	Cazden & Erickson NIE G-78-0099
	Hymes NIE G-78-0038
	Merritt & Humphrey NIE G-78-0081
TECHNOLOGY	Cole, Griffin & Newman NIE G-78-0159
Peer Networks	Borman NIE G-79-0123
	Gumperz, Cook-Gumperz, & Simons NIE G-78-0082
	Hrybyk & Farnham-Diggory NIE G-79-0124
	Hymes NIE G-78-0038
Home-School-Community Interaction	Cazden & Erickson NIE G-78-0099
	Cole, Griffin & Newman NIE G-78-0159
	Gumperz, Cook-Gumperz & Simons NIE G-78-0082
	Hrybyk & Farnham-Diggory NIE G-79-0124
	Hymes NIE G-78-0038
	Morine-Dershimer & Tenenberg NIE G-78-0081

Table 19 (Continued)

Potential Areas for Further Analysis and Synthesis
Within Studies on Teaching as a Linguistic Process

Area	Source
EVALUATING STUDENT PERFORMANCE	Cazden & Erickson NIE G-78-0099
	Cole, Griffin & Newman NIE G-78-0082
	Cooper, Ayers-lopez & Marquis NIE G-78-0098
	DeStefano & Pepinsky NIE G-79-0032
	Gumperz, Cook-Gumperz & Simons NIE G-78-0082
	Hymes NIE G-78-0094
	Merritt & Humphrey NIE G-78-0081
	Morine-Dershimer & Tenenberg NIE G-78-0161

Table 20

Sample Resources and References on the Nature of Teaching-Learning Processes as Linguistic Processes

Source	Author(s)	General Description
Protocol Series: Exploring Functional Language Center for Applied Linguistics, Washington, D.C., 1981	Series Coordinator: Stephen R. Cahir Authors: S. R. Cahir C. Kovacs	Set of six books and two videotapes on classroom language. Tapes made using research data base on a two year study on classroom language in nursery-grade three. Topics included are: 1. Teacher Talk Works 2. A Way with Words (focus on Language Arts) 3. What's What with Questions 4. It's Your Turn (turntaking) 5. When is Reading? 6. Transitions: Activity Between Activities Materials include a participants book and an instructors book and a 3/4 in videotape with six lessons to match the books.
Handbook: Audio-Visual Documentation of Everyday Life in Schools: A Handbook of Methods and Resources Institute for Research on Teaching, Michigan State University, 1982	Frederick Erickson	The handbook focuses on methods and resources for engaging in video and audiotape studies of everyday life in classrooms. The handbook also contains an extensive annotated bibliography of work that has been undertaken in this area and resources and references in the area of naturalistic research.
Edited Volumes: Functions of Language in the Classroom Teachers College Press, New York, 1972.	Cazden, Courtney, John, Vera & Hymes, Del	This volume contains reports of early studies on 1. Nonverbal communication 2. Varieties of Language and Verbal Repertoire 3. Varieties of Communicative Strategies The work explores communication in classrooms between and among members of different communication backgrounds.

Table 20 (Continued)

Sample Resources and References on the Nature of Teaching-Learning Processes as Linguistic Processes

Source	Author(s)	General Description
Communicating in Classrooms, Academic Press, New York, 1982	(Ed.) Cherry Wilkinson, L. Authors include: Cooper, C. Genishi, C. Erickson, F. Gumperz, J. & Cook-Gumperz, J. Dickson, P. Green, J. & Harker, J. Florio, S. Ervin-Tripp, S. DeStefano, J. & Pepinsky, H. Mehan, H. Merritt, M. & Humphrey, F. Cherry Wilkinson, L. Eder, D. Fillmore, L.W.	This volume presents findings on the nature of teaching as a linguistic process, peer teaching, literacy processes in classrooms, and linguistic processes involved in teaching-learn-processes.
Language and Ethnography Series: Language in Education: Ethnolinguistic Essays Washington, D.C.; Center for Applied Linguistics, 1981.	Hymes, D.	This collection of essays by Del Hymes focuses on topics such as: finctions of speech, speech and language, qualitative/ quantitative research methodologies in education: a linguistic perspective, what is ethnography, ethnographic monitoring, and educational ethnology

Table 20 (Continued)

Sample Resources and References on the Nature of Teaching-Learning Processes as Linguistic Processes

Source	Author(s)	General Description
Communicating with Young Children, Theory Into Practice Vol. 18, No. 4, The Ohio State University	(Ed.)J. L. Green Authors include: Cook-Gumperz, J. Steinberg, Z. & Cazden, C. Genishi, C. Cherry-Wilkinson, L., & Dollagan, C. Arnold, M. Knott, G. Mehan, H. Wallat, C. & Green, J.L. Bloome, D. & Ripich, D. Florio S. & Shultz, J. Merritt, M. & Humphrey, F. Buckley, M. Borman, K.	This volume is designed for practioners and trainers. Research on communicative processes and on teaching as a linguistic process are presented. Each article moves from theory to practice.
Ethnography and Language in Educational Settings, Ablex Publishing Corporation, Norwood, New Jersey, 1981	(Ed.) J.L. Green & C. Wallat Authors include: Gumperz, John J. Cook-Gumperz, J. Sevigny, M. Lutz, F. Wallat, C., Green, J., Conlin, S., & Haramis, M. Corsaro, W. Erickson, F. & Shultz, J. Green, J. & Wallat, C. Hall, W. & Guthrie, L. Cherry-Wilkinson, L. Garnica, O. Hutson, B. Frederiksen, C. Bernier, N.	This volume is primarily a research volume that explores the theoretical issues involved in doing ethnographic and micro-ethnographic research, action research and qualitative-quantitative studies of on-going life in classrooms. Included are articles co-authored by teachers and researchers. In addition, a roundtable discussion among a group of researchers, teacher trainers, curriculum developers and educational leaders identifies issues in engaging in naturalistic research and theoretical issues involved in such research.

information about the procedures used to collect this data, with an index to the corpus and background information available, and with examples of how to proceed with such research and how to do analysis using the procedures developed in this emerging field. This tape then is both a training tape and a research "sampler." Such a tape could facilitate secondary analysis studies.

In actuality, the uses of these materials and data banks has only just begun to be explored. Dialogues need to continue between teachers, researchers, trainers, and other educational professionals about the potential use of the indepth descriptions generated from the studies of teaching as a linguistic process. The remainder of the information presented in Table 20 is provided as a starting point. The materials presented on this table include work from the core studies; this work also provides theoretical discussions of the processes involved in this emerging field, the research methodologies that are developing, and the implications of this work for teachers and other educators concerned with fine-tuning instruction in classrooms. This work, therefore, lays the foundation for the exploration of teaching-learning processes as linguistic processes.

Dissemination. Dissemination efforts for these studies have been on-going; however, the complexity of the studies means that these efforts are continuing and additional dissemination efforts will be undertaken in the year to come. In addition, several of the studies are still completing final analysis and therefore, the results from these studies are more limited. In Table 21 the initial dissemination efforts of these projects are represented. As indicated in this table, work on teaching as a linguistic processes is informing both education and the home disciplines

Table 21

Dissemination Information: Sphere of Influence

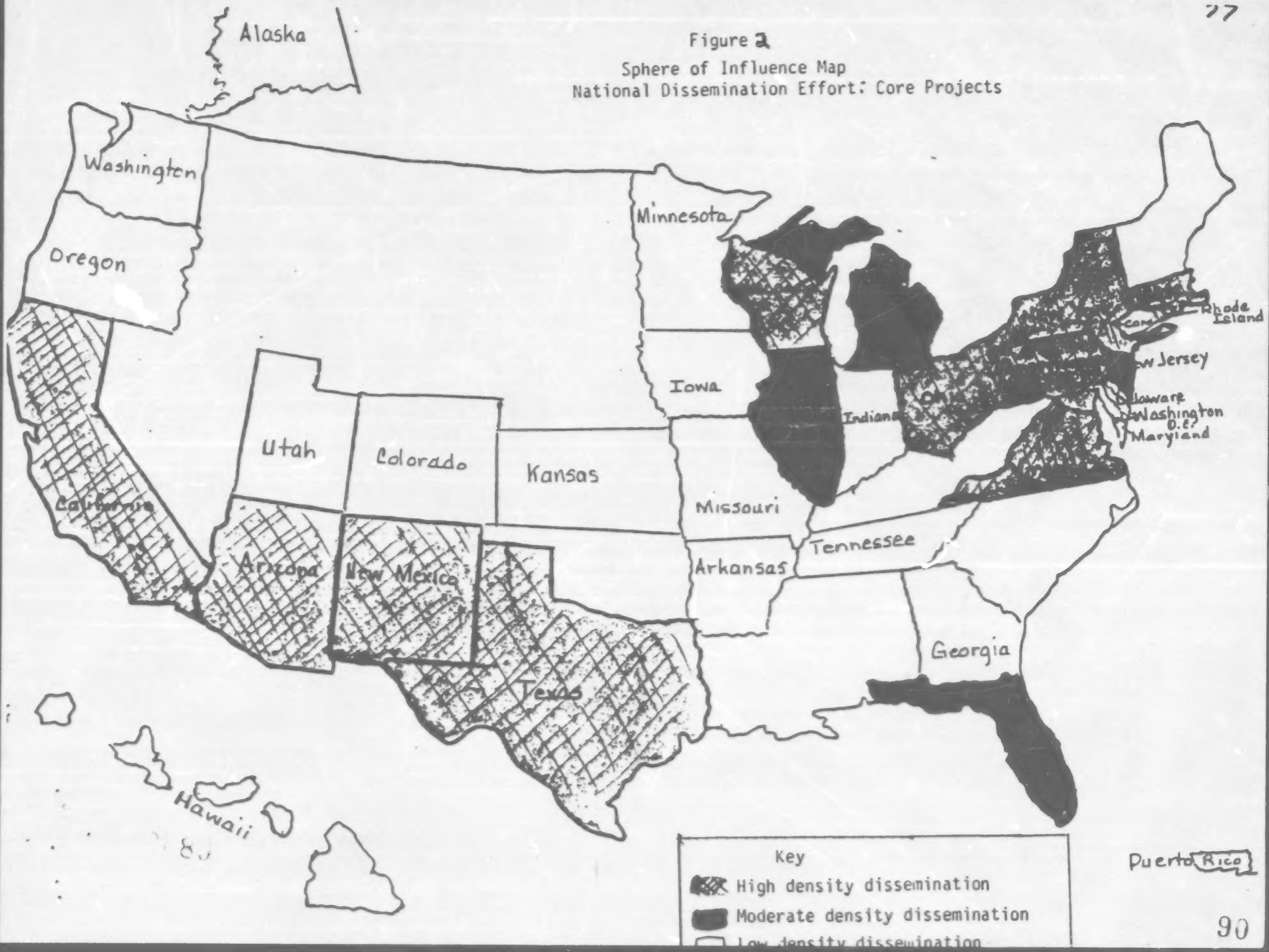
States Presentations/ Paper dissemination	Foreign Countries Presentations/ Paper dissemination	Profession Organizations/ Conferences	Academic Disciplines Represented
Alaska	Australia	American Anthropology Association	Anthropology
Arizona	Canada	American Educational Research Association	Applied Psychology
Arkansas	England	American Psychology Association	Child Development
California	Germany, West	Association for Educational Communication & Technology	Child Language
Colorado	Guinea, West Africa	Berkeley Linguistic Society	Communications
Connecticut	Italy	Center for Applied Linguistic	Early Childhood
Delaware	Ireland	Chicago Linguistic Society	Education: Accreditation
Florida	Japan	Child Development Associates Consortium	Education: Bilingual
Georgia	Kenya	Conference on Progress Addressed to Preparation of Professionals	Education: English
Hawaii	Mexico	Delaware Valley Writing Conference	Education: Reading
Illinois	Netherlands	Eastern Educational Research Association	Education: Research
Indiana	Russia	East Lansing Schools	Education: Teacher Education/ Preparation
Iowa	Scotland	Ethnography & Education University of Penn.	Education: Writing
Kansas	Switzerland	International Conference Applied Psychology	English as a Second Language
Maryland	Thailand	International Reading Association	Ethnography of Communication
Massachusetts		International Reading Association, Regional Conference: Syracuse	Psycholinguistics
Michigan		Internationanal Reading Association, Impact Conference: New York City	Psychology
Minnesota		International Reading Association, World Congress Dublin, Ireland	Sociolinguistics
Missouri			Technology & Education
New Jersey			
New Mexico			
New York			
Ohio			
Oregon			
Pennsylvania			
Rhode Island			
Tennessee			
Texas			
Utah			
Virginia			
Washington			
Washington, D.C.			
Wisconsin			
Puerto Rico			

States of Presentations/ Paper dissemination	Foreign Countries of Presentations/ Paper dissemination	Professional Organizations/ Conferences	Academic Disciplines Represented
		International Society or the Study of Behavioral Development	
		Institute for Research on Teaching	
		Invisible College	
		Invisible College, Northeast	
		Middle States Association Conference on Literacy	
		National Association of Mexican American Child	
		National Council of Teachers of English	
		National Conference on Reading	
		National Institute of Education: Conference on Reading	
		Northeastern Educational Research Association	
		Pennsylvania Council of Teachers of English	
		Pennsylvania Educational Research Association	
		Rutgers Child Language Association	
		Society for Human Development	
		Society for Research on Child Development	
		Soutwest Regional Laboratory	
		Special Interest Group: Bilingual Education Research	
		Stanford Child Language Association	
		Syracuse Alumnaversity	
		Teaching English as a Second Language	
		University of Delaware Symposium on Ethnography	

of the researchers. To date, people in thirty-nine organizations, nineteen areas of research, thirty-three states, one territory, and fifteen foreign countries have received information about these projects and the nature of teaching-learning processes as linguistic processes. These people represent a growing constituency for work in this emerging area. Figure 2 presents a picture of this growing influence on the national level.

Figure 2

Sphere of Influence Map
National Dissemination Effort: Core Projects



Appendix A

Descriptions of How Knowledge of Official and Unofficial Discourse Variables Became Resources for One Supervisor of Student Teachers and for One Kindergarten Teacher

Supervison: Debbie Smith
University of Delaware
Department of Educational Development

Teacher: Susan Marx Conlin
University Elementary School
Kent State University

A1

he narrative account that follows was prepared at the request of the author of this paper. Debbie Smith worked as a graduate assistant on part of the synthesis and state of the art paper presented in the main body of this work. While the comments were requested, the use of constructs from work on the nature of teaching-learning processes was spontaneous and not part of a planned study or curriculum experiement; therefore, this narrative provides a description of what one teacher extracted from reading the information contained in the studies on teaching-learning processes as linguistic processes reported in this paper.

I think one of the main reasons I ended up using so much of what we had worked on over the summer was that it just struck me, as an experienced teacher, as being so powerful. I recognized things I had done -- strategies and language I had used, almost unconsciously, I think --- and saw them for the first time as purposeful, cognitive entities. Notions like flagging, slotting in, redundant channels evoked a shock of recognition; my guess is, that many "good" teachers evolve, ar pick them up from other teachers, but never examine them consciously as part of their teaching. Like many of the methods students, I had thought of my teaching as mainly doing content; the form I acquired was merely an effective means to an end.

So, when I began observing and conferencing with methods students, and reading their comments in their logs, all of these ideas were fresh in my head. I was excited about them, and it seemed natural to share them with students. I have to admit that, at first, I shared them as content; as the semester progressed, I began to consciously employ them as the form of what I did, also. There are so many areas in which these issues appeared; I'd like to describe briefly each one, and then if any need fleshing out, you can let me know.

The first issue which became obvious was that of establishing ground rules; students seemed to have no conception of themselves as context-makers, and of the importance of context in the classroom. They assumed that whatever understandings their cooperating teacher had with children would somehow attach themselves to methods students as a sort of invisible protective shield. They were surprised to find that this was not so, and puzzled by the children's efforts to test out, by trial and error, what the boundaries were. Sixteen out of nineteen of my comments on detailed observations in the first month had to do with ground rules!

Looking back now, I see more clearly that most students considered teaching to be doing content; they were unaware of themselves as responsible also for arranging the form of the lesson. Even students who were amazingly perceptive at noticing the effects of their cooperating teacher's clear rules (or lack of clarity) on the children's comfort and ability to function in the classroom, seemed unable to connect this knowledge to their own teaching. It was almost as if their definition of teaching prevented them from focusing on anything outside of content --- much like nearsightedness prevents a person from seeing beyond a limited range. Over the course of several conferences with each student, we slowly began to talk more and more about ground rules, routines, their usefulness to teacher and children, and the delicate art of negotiating them and maintaining them. I think the students' own frustration in getting the content across opened them up tocconsidering what might be preventing successful lessons. And some of the students learned this lesson well. You remember my telling you about the student whose cooperating teacher was absent on her last day, and how the substitute asked her to start the day off, because she knew the routines --- and the student's joy in her competence and knowledge to do that, and in the children's cooperation and acceptance of her in that role.

I'm finding it almost impossible to think about/ relate this in a linear way; it truly was more of a simultaneous weaving of many threads over time, than it was an orderly, one-issue-at-a-time progression. At the same time that most students were beginning to struggle with ground rules, we were also discussing physical settings as message-givers and context-makers. I found that students were often unaware of movements and settings which worked against them from the start --- simple things like, are the children facing the action in the room or is their field of vision limited to this group and this teacher? Are the children spread too far away from you and each other? Can they all see and hear? Sometimes, a student intuitively would move the group closer, or rearrange the seating/setting, yet be unaware of her reasons and the effects on children, when I pointed this out in conference.

This led directly into the whole issue of teacher as physical setting. A student sitting on the floor with her head in her hands, in an almost vertical position, gives a much different message to children -- about the importance of the lesson and her own interest in it -- than does a student sitting on a chair but leaning forward into the group, with children around her on the carpet. It was satisfying to me to see students begin to think about these issues; one student was able to decide in the middle of the lesson that she needed to move the group closer to her, and explained her reasons to the children. Another noticed that her discussion of a story had changed into teacher-child dyads,

with the rest of the group tuning out, and shifted her body position and gaze to include the whole group.

Throughout the semester, with different students, we discussed the use of gesture, facial expression, body position, timing of movement and even quality of movement (eg.,fast and impatient walking or smooth and easy walking). Often, students appeared unaware of the effects all of these channels were having on their goal of teaching conten[illegible]ce they realized their power, however, they were often able to consciously pl[illegible] and use many channels to support their teaching, instead of hindering it. Stu[illegible] got rid of the irritating "SSSHHH!" and used gestures; they leaned forward [illegible] the group; they began to use facial expression to create and maintain excitement and interest, One methods student, in a kindergarten class, in her last lesson, used body position, gesture, expressdon voice and language so effectively that she far outshone her cooperating teacher!

Now we come to the actual use of language in students' teaching. There are so many issues that students and I discussed, that I think I'll sort of briefly describe each and give an example, because otherwise I'll be another week finishing this! One of the first uses of language we looked at was that of framing --- establishing verbally at the beginning of the lesson, what was going to happen, who would do what, and what the student hoped to accomplish. Some students did this spontaneously, early on in the clinical work:

"We're going to make our own story....
Each of you can tell me....
When we're finished...."

and needed only to have its label and usefulness pointed out. Others had not integrated this idea into their practice, even by their last lesson:

"We're going to talk about punctuation."

Most students gradually became more adept as time passed, and as we discussed the same issues in each lesson they taught.

Another place where language was crucial was in negotiating and maintaining ground rules, once the student was persuaded of their usefulness. We talked together in conferences about different ways of saying the same thing and the message conveyed by the different ways. Language such as,

"Everybody has to listen.
Whatever I tell you to do, you have to do.
Close your books.
Sit down."

was certainly clear, but often backfired on students, leaving them confused and frustrated. In conferences, I modelled more invitational, cooperative but firm language and encouraged students to play around with it in their teaching, to draw their own conclusions.We talked about students' use of language to model the language they hoped children would use; to reinforce behavior as the lesson progressed; and to send indirect messages to those who were not following the ground rules (eg., "Sharon has her hand up.").

A4

In talking about language, I also commented often on the pacing, loudness, tension, etc., in students' voices.One student maintained a loud, flat voice throughout a lesson, even though the children were involved and with her;we discussed varying the intensity and loudness to draw the children into the lesson even more. Another student was unaware of the way her voice got faster, louder, and more tense as the general room noise increased — and the message this voice change gave her group, which resulted in their increased agitation, loss of attention, etc. Although atudents were generally quite good at using their voices in reading stories, they appeared to have only one teacher voice — brisk, even stern -- when doing "teaching of lessons." They were surprised and pleased with the effects when they consciously varied their voices and applied their reading voice skills to lessons themselves.

On another level, we talked about patterns of usage of language in teaching, in maintaining ground rules, but also as messages in themselves. Students often selectively enforced ground rules, yet seemed unaware when I pointed this out to them. For example, in this sequence,

Student calls on child A.
Child K. answers.
Student responds to K.'s answer.

the message could be, "A. probably doesn't have ananswer; it's okay for K. to call out; the teacher likes K. better than A.; we don't really need to raise our hands for a turn," etc., Students were amazed by the power of seemingly trivial interactions to thwart their entire lesson. Another student told a child,

"L., from now on, you wait until I ask you."

after having allowed several other children to call out answers. She was chagrined to discover that what she had thought was consistency was, in fact, inconsistency.

This issue of timing and use of the act of speaking became a crucial one for many students. One student continued talking to her group while the cooperating teacher was addressing the whole class. She seemed oblivious to the message she was sending -- "This is not important to listen to; I can be rude and get away with it." Yet, when children used language in exactly the same way during her subsequent lesson, she became quite angry with them. Another student allowed herself to be involved in a verbal consultation with a child, while another child was reading aloud to the whole class. She was aware of the conflict, when we later discussed what possible messages this might convey, but genuinely seemed to feel that when a child spoke to her, she ha. to respond. When she realized the destructive power of the inadvertent message — that teachers can demand courteous behavior from everyone else, but don't have to demonstrate it themselves -- she was able to evaluate such bids from a different perspective.

Students often spontaneously used language in an effective way in lessons, and when I pointed this out to them, incorporated this usage more consciously into their repertoire. These examples also suggested uses of language which I could raise with other students. For example, one student used a particular phrase, "Look carefully," to flag important parts of her lesson. Another asked, "What was Little Red Riding Hood's mistake?" throughout the story to point out major incidents. Towards the end of the clinical experience, several students began asking personalized questions, eg., "You're the first little pig; what will you say?" "If it were your brother on the ship, would you be worried?" (This was in contrast to the kinds of questions asked earlier, eg., "A good listener -- what must he or she do?")By this time, they were also beginning to monitor the reactions they received, and when I pointed out the shift in the nature of their questioning, they were able to recall the children's language and interest which resulted. In addition, a couple of students were able to use language to convey play, eg., "I'm going to trick you!" (said with rising inflection) or "Whisper in my ear..." (said in a whisper), and notice the liveliness and joy in children's participation.

Finally, several students and I had ongoing discussions about their assumptions concerning the meaning of children's language acts. These students were teaching several black children in an integrated classroom in which the cooperating teacher's assumptions were negative; she had, in effect, written off the children as "naughty." We discussed other possible interpretations of children's chatting and playfully bantering, and gradually, I think, laid to rest (at least for the students) the notion that this was meant to be "naughty" or even personally directed at the students. Unfortunately, because children were allowed to speak so infrequently in most of the classrooms, more discussion of children's language was limited!

In terms of my own learning how to effectively facilitate students' learning and monitoring of their teaching, I found myself framing out conferences, using my language and voice to model possible alternatives, asking questions in a personal way, making fewer judgmental statements and recording more exact language and behavior, so that we could examine it together. I gradually got better at fine-tuning the match of issues which I felt were important in what I had seen of a student's teaching, with the messages I got back, from all channels, telling me what this student was interested in, and capable of, discussing. I feel there is so much more here to talk about, but this will do for a start. Let me know -- clearly!-- if you'd like more, different, better examples, etc.

In the next section of this appendix, the charts developed by one teacher involved in an ethnographic and sociolinguistic research project (Green & Wallat, 1979;1981; Wallat, Green, Conlin, & Haramis, 1981) are presented. Chart 1 provides a list of unanswered questions this teacher had about her role in the teaching process. Chart 2 specifies what this teacher gained and the nature of the involvement leading to this learning. Other sources of teacher testimony are listed in earlier sections of this report. In addition, the Hymes (1981) report contains testimony by administrators as well as teachers who have learned to use ethnographic monitoring techniques.

Chart 1

Unanswered Questions Concerning

My Role in the Teaching Process

1. How do children learn how to mean from day to day?
2. What is going on in the classroom today?
3. In what way are these learning episodes linked?
4. Where does one learning episode end and the next begin?
5. How do these children make sense of our day together?
6. How do I help define for a child the definition of group/role of group member?

Extracted from paper presented at the American Educational Research Association Meetings in Boston, 1980. This paper was part of a symposium on "Ethnographic Analysis of Classroom Communicative and Social Processes: Researcher, Student and Teacher Perceptions".

Chart 2

Knowledge Acquired	Nature of Involvement
1. This experience has helped me to assess the outcomes of my teaching goals (e.g., to help children define group and experience being a group member). Assessment occurs through observing videotapes over time, rethinking the day as I completed the teacher self-interview.	1. Through the observation of videotapes, I was able to affirm my goal that clear avenues of assess were present in News and Views; for example, for children to "try on" the role of group member.
2. I developed a greater awareness of ways in which I signal meaning and communicate with my students--particularly paralinguistically.	2. Through viewing videotapes over time, I was able to observe my own use of body movement, proxemic shifts, postural shifts.
3. I improved my ability to articulate my teaching goals and strategies.	3. I improved this ability through a) sharing my goals with parents and other educators. b) rethinking and restating goals in daily self interviews. (See Chart 3)
4. I improved my documentation of classroom interaction.	4. I have developed a) my awareness of nonverbal paralinguistic cues. b) ways of recording more specific anecdotal notes. c) developed more specific charting and tracking notes (e.g., what is happening with "A" over time?).
5. I increased my involvement with parents.	5. Through meetings to view tapes and correspondence to relay classroom project goals, we gained a greater understanding of each other and the children themselves.
6. I reinforced my belief in the role of the child as an active problem solver.	6. Through a longitudinal study of videotapes visualizing outcomes of child interaction, I more clearly observed peer-peer interaction as this interaction related to a three-level problem solving strategy. I took an indepth look at how children solve problems together.

Notes

1 The work upon which this publication is based was performed pursuant to order no. NIE - P-81-0084 of the National Institute of Education. It does not, however, necessarily reflect the views of that agency.

2 For an historical perspective on the roots of this emerging field see the Introduction in Cazden, C., John, V, and Hymes, D, Functions of Language in the Classroom, Teachers College Press New York, 1972.

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